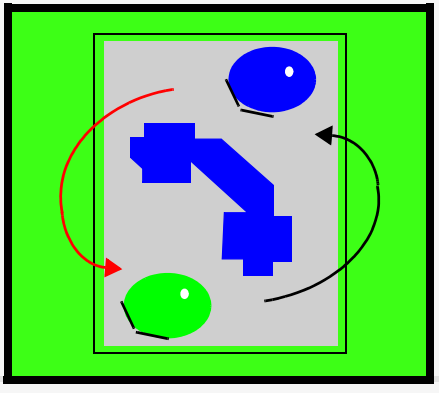
CyberSWITCH and SmartSwitch Access Devices



Supports Management Module SM-CSI1077

APRISMA SPECTRUM® POWERED SOLUTIONS

Device Management

Copyright Notice

Document 2231. Copyright © 2001-present by Aprisma Management Technologies, Inc. All rights reserved worldwide. Use, duplication, or disclosure by the United States government is subject to the restrictions set forth in DFARS 252.227-7013(c)(1)(ii) and FAR 52.227-19.

Liability Disclaimer

Aprisma Management Technologies, Inc. (“Aprisma”) reserves the right to make changes in specifications and other information contained in this document without prior notice. In all cases, the reader should contact Aprisma to inquire if any changes have been made.

The hardware, firmware, or software described in this manual is subject to change without notice.

IN NO EVENT SHALL APRISMA, ITS EMPLOYEES, OFFICERS, DIRECTORS, AGENTS, OR AFFILIATES BE LIABLE FOR ANY INCIDENTAL, INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES WHATSOEVER (INCLUDING BUT NOT LIMITED TO LOST PROFITS) ARISING OUT OF OR RELATED TO THIS MANUAL OR THE INFORMATION CONTAINED IN IT, EVEN IF APRISMA HAS BEEN ADVISED OF, HAS KNOWN, OR SHOULD HAVE KNOWN, THE POSSIBILITY OF SUCH DAMAGES.

Trademark, Service Mark, and Logo Information

SPECTRUM, **IMT**, and the **SPECTRUM IMT/VNM** logo are registered trademarks of Aprisma Management Technologies, Inc., or its affiliates. **APRISMA**, **APRISMA MANAGEMENT TECHNOLOGIES**, the **APRISMA MANAGEMENT TECHNOLOGIES** logo, **MANAGE WHAT MATTERS**, **DCM**, **VNM**, **SpectroGRAPH**, **SpectroSERVER**, **Inductive Modeling Technology**, **Device Communications Manager**, **SPECTRUM Security Manager**, and **Virtual Network Machine** are unregistered trademarks of Aprisma Management Technologies, Inc., or its affiliates. For a complete list of Aprisma trademarks, service marks, and trade names, go to http://www.aprisma.com/manuals/trademark-list.htm.

All referenced trademarks, service marks, and trade names identified in this document, whether registered or unregistered, are the intellectual property of their respective owners. No rights are granted by Aprisma Management Technologies, Inc., to use such marks, whether by implication, estoppel, or otherwise. If you have comments or concerns about trademark or copyright references, please send an e-mail to spectrum-docs@aprisma.com; we will do our best to help.

Restricted Rights Notice

(Applicable to licenses to the United States government only.)

This software and/or user documentation is/are provided with RESTRICTED AND LIMITED RIGHTS. Use, duplication, or disclosure by the government is subject to restrictions as set forth in FAR 52.227-14 (June 1987) Alternate III(g)(3) (June 1987), FAR 52.227-19 (June 1987), or DFARS 52.227-7013(c)(1)(ii) (June 1988), and/or in similar or successor clauses in the FAR or DFARS, or in the DOD or NASA FAR Supplement, as applicable. Contractor/manufacturer is Aprisma Management Technologies, Inc. In the event the government seeks to obtain the software pursuant to standard commercial practice, this software agreement, instead of the noted regulatory clauses, shall control the terms of the government's license.

Virus Disclaimer

Aprisma makes no representations or warranties to the effect that the licensed software is virus-free.

Aprisma has tested its software with current virus-checking technologies. However, because no antivirus system is 100 percent effective, we strongly recommend that you write-protect the licensed software and verify (with an antivirus system in which you have confidence) that the licensed software, prior to installation, is virus-free.

Contact Information

Aprisma Management Technologies, Inc.
273 Corporate Drive
Portsmouth, NH 03801

Phone:	603-334-2100
U.S. toll-free:	877-468-1448
Web site:	http://www.aprisma.com

Contents

INTRODUCTION 6

Purpose and Scope 6
Required Reading 6
Supported Devices 7
The SPECTRUM Model 8

TASKS 9

DEVICE VIEWS 10

Chassis Device View (CSX200 & 400 Only) 10
Module Icon 11
Module Icon Subviews Menu 13
Module Identification Label 13
Application Label 13
Interface Icon (CSX200 & 400 only) 15
Interface Number Label 15
Interface Status Label 15
Port Icons (CSX200 Only) 16
Port Number Label 16
Port Status Label 17
Port Icon Subviews Menu 17
Interface Device View 18
Interface Icon 19
Interface Number Label 19
Interface Status Label 19
Interface Type Label 20
MAC Address Label 20
Network Information Label 20
Gauge Label 20
Network Type Label 20
CyberSWITCH Interface Icon Subviews Menu 21
SmartSwitch Interface Icon Subviews Menu 21
Interface Status View 22
Secondary Address Panel 22

DEVICE TOPOLOGY VIEWS 23

Device Topology View 23
CsEnetRptrMgt Icon 24
Repeater Device Topology View 24
Repeater Interface Icon 24

APPLICATION VIEW 26

Application Icons 27
Supported Applications 27
CyberSWITCH Applications 29
InterHub Application (ih000App) 29
IH Resource View 30
IH Line View 31
IH Data View 32
IH LAN View 33
Community Name View 34
IH Trap Receiver View 34

User Information View 35
Statistic Report View 36
Status Information View 36
InterHub Interface View 37
ISDN B-Channel Usage Information 37
Container Application (ContainerApp) 38
Container Resource Information View 39
Container Type Report View 39
Container Logical Information View 40
Container Physical Information View 40
Container Network Address Information View 41
Repeater Application (CsEntetRptrMgt) 41
SmartSwitch Applications 42
SSA_CMMContApp 42
Board Information Table View 42
Module Information Table View 45
SSA_DAApp 46
Demand Access (DA) Registry Table View 46
SSA_MsgXferApp 47
Message Transfer Service Table View 47
SSA_AapslogApp 49
Client/Server Log Configuration View 49
Log Information View 50
SSA_BufferApp 50
Buffer Pool Information Table View 51
Buffer Leak Information Table View 51
SSA_DS0App 52
Configuration View 52
IF Information View 53
SSA_IsdnApp 54
ISDN Common Configuration Table View 55
ISDN Line Configuration Table View 55
ISDN Call Information View 55
SSA_LineStsApp 56
Line Statistics Table View 57
SSA_MemoryApp 58
Memory Analysis View 58
Leak Table 59
SSA_ShRAMApp 60
Shared RAM Information View 60
SSA_WANConnApp 60
Wan Connection Info Table View 60
SSA_WANDevApp 62
WAN Device Information Table View 62
WAN Telephone List View 64

PERFORMANCE VIEWS 65

CSIIfPort Performance View 65
Generic If Port Performance View 66
CSI Bridge Interface Performance View 66

CONFIGURATION VIEWS 67

Device Configuration View 67
Port Configuration - CSIIfPort View 68
Port Configuration View (CSX200 only) 69
Repeater Configuration View (CSX200 only) 69

MODEL INFORMATION VIEWS 70

INDEX 71

Contents

Introduction

This section introduces SPECTRUM Device Management documentation for the CyberSWITCH and SmartSwitch Access devices.

This introduction contains the following topics:

- *Purpose and Scope*
- *Required Reading*
- *Supported Devices (Page 7)*
- *The SPECTRUM Model (Page 8)*

Purpose and Scope

Use this documentation as a guide for managing CyberSWITCH and SmartSwitch Access devices with the SPECTRUM management module SM-CSI1077. The documentation describes the icons, menus, and views that enable you to remotely monitor, configure, and troubleshoot CyberSWITCH and SmartSwitch Access devices through software models in your SPECTRUM database.

Only information specific to the supported management module is included in this documentation. For general information about device management using SPECTRUM and for explanations of basic SPECTRUM functionality and navigation techniques, refer to the documentation listed under *Required Reading*.

Required Reading

To use this document, you should be familiar with the information provided in the following documentation:

- ***Getting Started with SPECTRUM for Operators***
- ***Getting Started with SPECTRUM for Administrators***
- ***How to Manage Your Network with SPECTRUM***
- ***SPECTRUM Views***
- ***SPECTRUM Icons***
- ***SPECTRUM Menus***

Supported Devices

The SPECTRUM management module SM-CSI1077 currently allows you to model several different types of CyberSWITCH and SmartSwitch Access devices as described below.

CSX200 - Standalone remote access device with Ethernet support and single WPIM. Provides twelve 10BaseTports and comes in the following WAN configurations:

CSX201 - T1 Physical Interface with built in CSU/DSU. Supports Time Division Multiplexing and allows for channelization of up to 24 links.

CSX202 - Synchronous Physical Interface (RS530). Supports data rates from 2.4 Kbps - 2.048 Mbps. External conversion cables are used to support interfaces such as v.35, x.21, RS449, and RS232.

CSX203 - DDS Physical Interface. Built in CSU/DSU supports data rates of 56 and 64 Kbps for North American Standards.

CSX400 - Standalone remote access switch with Ethernet support. Provides twelve 10BaseT Ports, two Ethernet ports, and two WAN connections via T1, Sync, and DDS.

CSX5500 - Eight-slot passive backplane chassis with single or dual port Ethernet connections. Supports PPP, ML-PPP, and Async-PPP protocols. ISDN BRI or PRI plug-in modules provide up to twelve BRI or three PRI connections. Supports IP, IPX, and AppleTalk routing.

CSX7000 - Sixteen-slot fault tolerant chassis with passive backplane. Provides ISDN BRI or PRI and single or dual port Ethernet. PPP, ML-PPP, and Async PPP routing and bridging are supported as well as multiple security protocols.

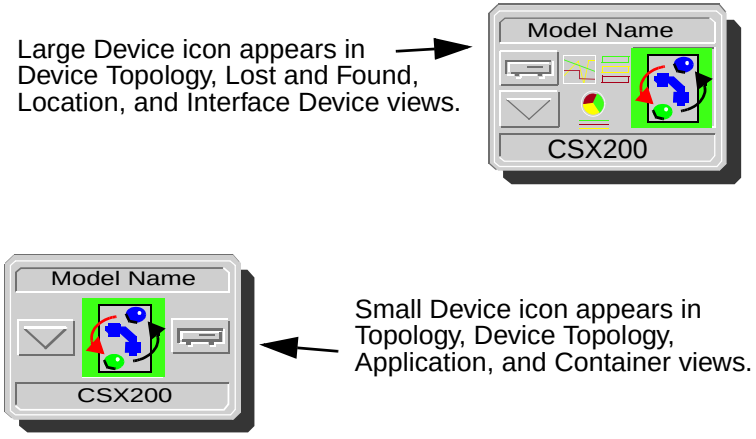
SSA710-48 - T1 Interfaces: Dual ISDN T1/PRI via RJ-48C; integral CSU T1 Signaling: NI-2, AT&T 4ESS/5ESS/Definity, DMS500/250/100, SL100, INS1500 (Japan) T1 Framing: D4/SF, ESF (Extended Super Frame) T1 Line Coding: B8ZS

SSA720-60 - E1 Interfaces: Dual ISDN E1/PRI via RJ-48C E1 Signaling: ETSI - CTR4/NET5 (Euro-ISDN), 1TR6 (Germany), TS014/TS038 (Australia/New Zealand) E1 Framing: Multi-Framing with CRC4, Double Framing (Basic) E1 Line Coding: HDB3

The SPECTRUM Model

SPECTRUM uses multiple device model types for modeling the supported CyberSWITCH and SmartSwitch Access devices. These device model types are **CSX200**, **CSX400**, **CSX5500**, and **CSX7000** for the CyberSWITCH devices and **SSA710**, **SSA720**,**HSIM-SSA710** and **HSIM-SSA720** for the SmartSwitch Access devices. These models are represented in SpectroGRAPH views by Device icons. As shown below, the appearance of the Device icon varies slightly depending on the kind of view in which it appears.

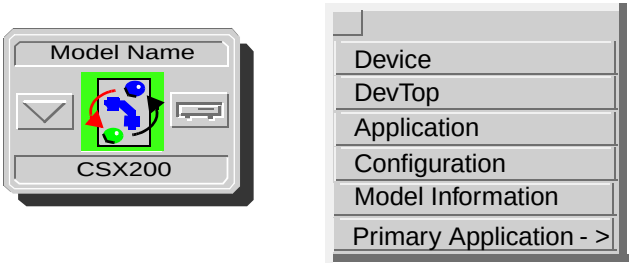
Figure 1: Device Icon


Large Device icon appears in Device Topology, Lost and Found, Location, and Interface Device views.
Model Name
CSX200
Model Name
CSX200
Small Device icon appears in Topology, Device Topology, Application, and Container views.

Device icons provide access to the views, subviews, and tables that let you manage the modeled device. Figure 2 shows the model-specific portion of the **Icon Subviews** menu for a CSX200 Device icon in a Topology view. The views listed below are accessible directly from this menu and are described individually in subsequent sections of this documentation.

- *Device Views* (Page 10)
- *Device Topology Views* (Page 23)
- *Application View* (Page 26)
- *Configuration Views* (Page 67)
- *Performance Views* (Page 65)
- *Model Information Views* (Page 70)

Figure 2: Device Icon Subviews Menu Options



Tasks

This section identifies various management and troubleshooting tasks that can be performed for models of the CyberSWITCH and SmartSwitch Access devices using the views, icons, and labels referenced within this document.

- Set the status of the Interface: *Interface Status View* (Page 22)
- Enable and change statistics on the gauge label of the Interface Icon: *Gauge Label* (Page 20)
- Set Interface Thresholds: *SmartSwitch Interface Icon Subviews Menu* (Page 21)
- Set the Administrative Status for the device: *Interface Status View* (Page 22). Administrative Status for a particular application can be set from its respective application within the Application View section.
- Change Application being viewed: *Application Label* (Page 13)
- Enable or Disable a port: *Port Configuration - CSIIfPort View* (Page 68)
- Enable or Disable a port (CSX200 only): *Port Configuration View (CSX200 only)* (Page 69)
- Change a mask and address for an interface: *Secondary Address Panel* (Page 22)

Device Views

This section describes the Device views and subviews available for models of the CyberSWITCH and SmartSwitch Access devices.

Device views use icons and labels to represent the modeled device and its components, such as modules, ports, and applications. The CyberSWITCH and SmartSwitch Access devices support the following Device views:

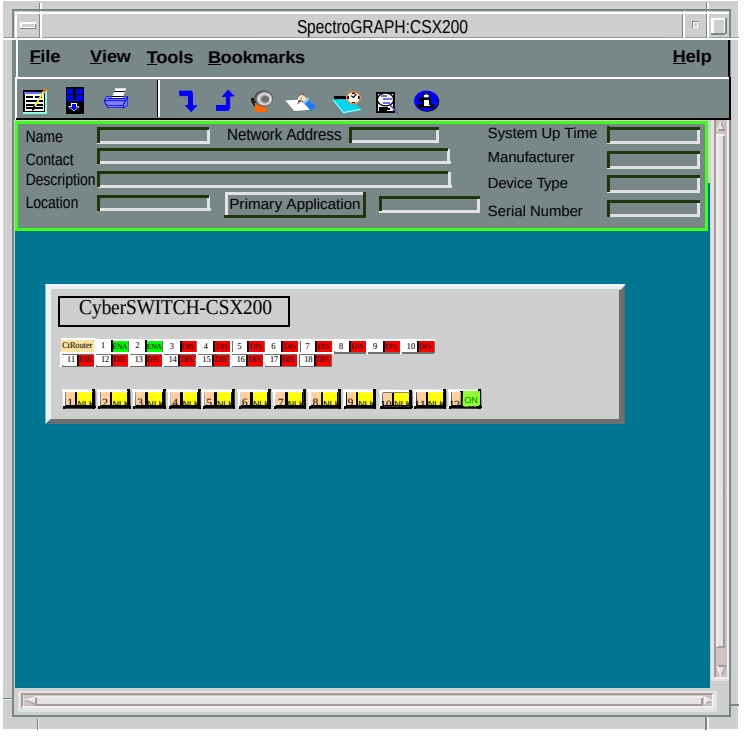
- *Chassis Device View (CSX200 & 400 Only)*
- *Interface Device View* (Page 18)

Chassis Device View (CSX200 & 400 Only)

Access: *From the* ***Icon Subviews*** *menu for the Device Icon, select* ***Chassis****.*

This view contains a Chassis icon which provides a logical representation of the device. It contains icons and labels that represent the device's ports and interfaces. These icons and labels provide access to views that monitor performance, configuration, etc. Figure 3 is an example of a CSX200 Chassis Device view.

Figure 3: Chassis Device View



Module Icon

Figure 4 shows a close-up of a CSX200 Module icon from a Chassis Device view. The *double click* views for the Application label and Interface Status Label change, (see Table 1) depending upon the application selected (see Application Label on Page 13). The CSX400 Chassis icon is the same as the CSX200, except it has no Port Icons.

Figure 4: Chassis Icon

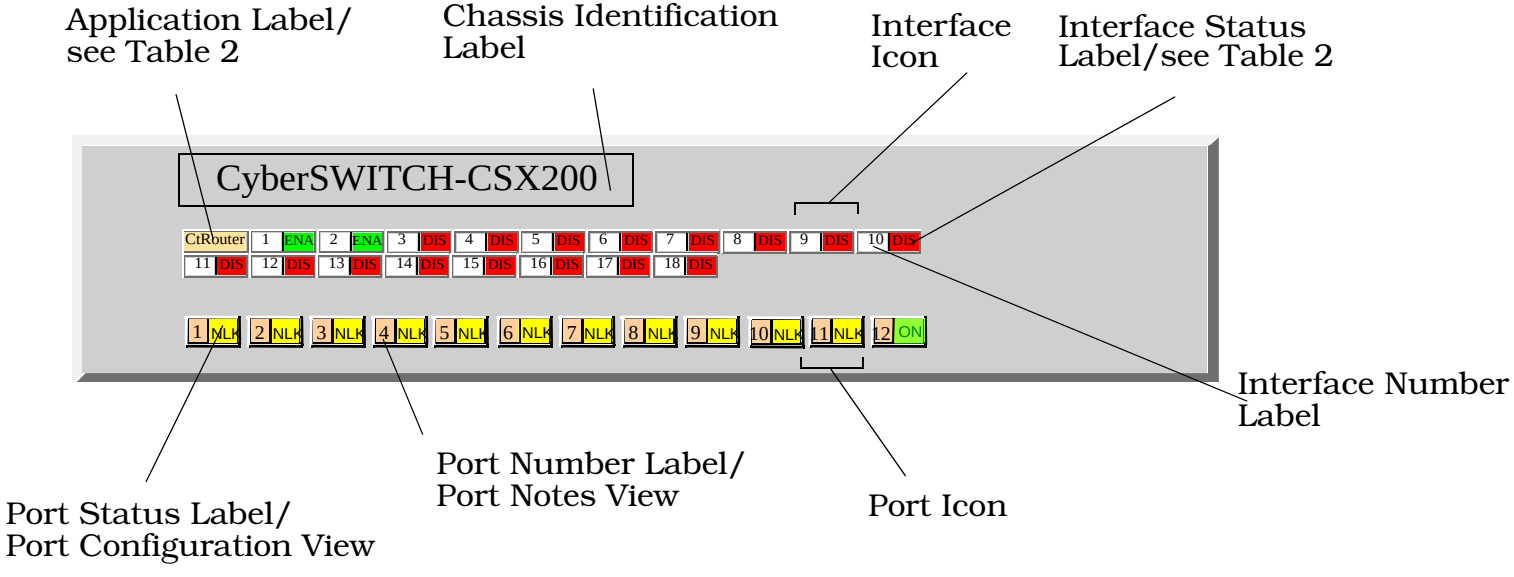


Table 1: Application and Interface Status Label Views

Application	View from Application Label	View from Interface Status Label
Physical	None	CSIIfPort Performance View, *Performance Views* (Page 65))
CtRouter	Router System Table CtRouter *	CtRouter Performance View *
IP OSPF	None	IP OSPF Performance View *
IP Routing	IP Routing System Configuration View *	IP Routing Performance View *
IP RIP	IP RIP Interface Configuration View *	IP RIP Performance View *
IPX Routing	IPX Routing System Configuration View *	IPX Routing Performance View *
IPX RIP	IPX RIP Interface Configuration View *	IPX RIP Performance View *
IPX SAP	IPX SAP Interface Configuration View *	IPX SAP Performance View *
Bridging	CSI Bridge Interface Performance View, (*Performance Views* (Page 65))	None

* See ***Routing Services Management Module Guide***

Module Icon Subviews Menu

Table 2 lists the Module Icon Subviews menu options for the Module icons.

Table 2: Module Icon Subviews Menu

Option	Opens the...
Configuration	**Device Configuration View** on Page 67.
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.
Module Notes	Module Notes view in which you can record notes about the module.
Application Display	Application Display submenu, which allows you to chose which application will be displayed in the Application label. Options are listed in Table 1.

Module Identification Label

This label identifies the device with which you are working.

Application Label

This label provides access to the Icon Subviews menu for the application displayed. The application selected determines the information displayed and the menu options available.

Table 3 lists the Icon Subviews menu options available if Bridging application is selected, Table 4 lists the Icon Subviews menu options available if CtRouter Application is selected, and Table 5 lists the Icon Subviews menu options available if another of the Routing Applications is selected. If the Physical application is selected, there are no application-specific Icon Subviews menu options.

Table 3: Bridging Application Subviews Menu

Option	Opens the...
Bridge Performance	Bridge Performance view described in ***Bridging Applications***.
Bridge Model Information	Bridge Model Information view described in ***Bridging Applications***.
Special Database	Ethernet Special Database Table view described in ***Bridging Applications***.

Table 3: Bridging Application Subviews Menu (Continued)

Option	Opens the...
Spanning Tree Information	Spanning Tree Information view described in ***Bridging Applications***.
Static Database Table	Static Database Table view described in ***Bridging Applications***.
Transparent Bridge Info	Transparent Bridge Information view described in ***Bridging Applications***.
Port Display Form	Port Display Form submenu which allows you to change the data displayed in the Port Status Label to one of the following: **Admin**, **Frames Forwarded**, **Frames Filtered**, and **Bridge Port Number**.

Table 4: CtRouter Application Subviews Menu

Option	Opens the...
Configuration	Configuration submenu, which accesses various routing tables described in the ***Routing Services Management Module Guide***.
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.
Basic Configuration	Basic Router Configuration view, which allows you to configure the routing services in your device. Available only for the CtRouter Application.

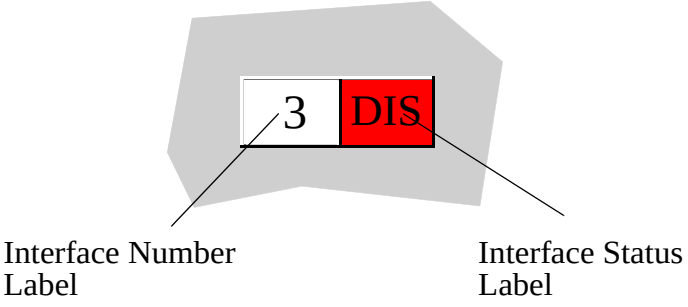
Table 5: Routing Applications Subviews Menu

Option	Opens the...
Configuration	Configuration submenu, which accesses various routing tables described in the ***Routing Services Management Module Guide***.
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

Interface Icon (CSX200 & 400 only)

Figure 5 represents the physical interface on the front panel of the device. It is composed of an Interface Number label, and an Interface Status label. This icon provides two Icon Subviews menu options allowing you to enable or disable the interface.

Figure 5: Interface Icon



Interface Number Label

This label displays the interface number.

Interface Status Label

This label displays the status of the Interface. These status values vary depending upon the application selected. In addition, this label provides double-click access to an application Performance view (Table 1).

Table 6, Table 7, and Table 8 describe the possible status values relative to the application selected.

Table 6: Interface Status for the Physical or MIB II Application

Color	Status	Description
Green	ON	Interface is operational; operational status is up.
Blue	OFF	Interface is off; operational status is down.
Gold	OFF	Interface is off; operational status is up.
Yellow	TST	Interface is in the test mode; operational status is up.
Red	TST	Interface is in the test mode; operational status is down.

Table 7: Interface Status for the Bridging Application

Color	Status	Description
Green	FWD	Bridge port is forwarding.
Blue	DIS	Bridge port is disabled.
Magenta	LST	Bridge is in the listening mode.
Magenta	LRN	Bridge is in the learning mode.
Orange	BLK	Bridge port is in the blocking mode.
Red	BRK	Bridge port is broken.
Blue	UNK	The status is unknown.

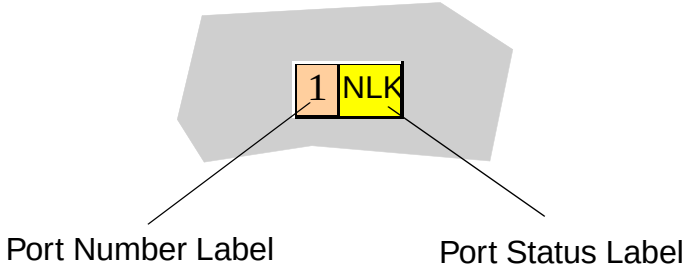
Table 8: Interface Status for Routing Applications

Color	Status	Description
Green	ENA	Interface is enabled
Blue	DIS	Interface is disabled
Blue	Other	None

Port Icons (CSX200 Only)

This port icon (see Figure 6) located within the module icon represents an Ethernet repeater port on the front panel of the device. It is composed of a Port Number label and a Port Status label.

Figure 6: Port Icon



Port Number Label

This label displays the port number. Double-click this label to open the Port Notes view which allows you to save noted information about a particular port. Refer to ***SPECTRUM Views*** for more information.

Port Status Label

This label displays the status of the port. Double-click this label to open the Port Configuration View (CSX200 only) on Page 69. Possible port status values are listed in Table 9.

Table 9: Port Status Values

Color	Status	Description
Green	ACT	The module is connected and active.
Blue	OFF	The module is not connected.
Yellow	CON	The module is connecting.

Port Icon Subviews Menu

Table 10 lists the Icon Subviews menu options available for CSX200 Port icons.

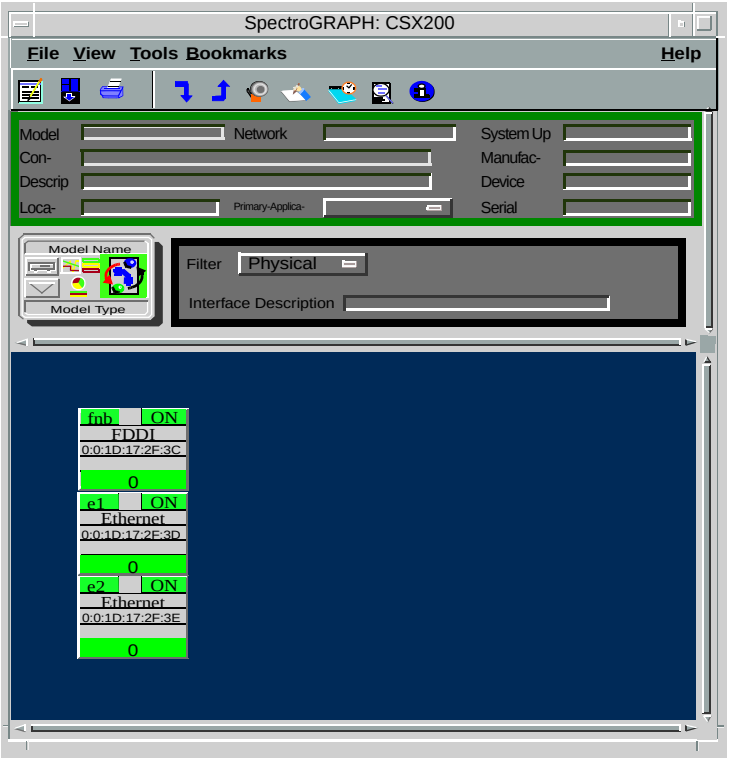
Table 10: Port Icon Subviews Menu

Option	Opens the...
Port Notes	Port Notes view, which allows you to save noted information about a particular port.
Port Configuration	**Port Configuration View (CSX200 only)** on Page 69.
Enable/Disable Port	Enable/Disable Port dialog box, which allows you to enable or disable a selected port.

Interface Device View

This view provides dynamic configuration and performance information for each of the device's interfaces, which are represented by Interface icons in the bottom panel of the view (see Figure 7). The middle panel of the view also displays a Device icon, which allows you to monitor the device operation and access other device-specific views.

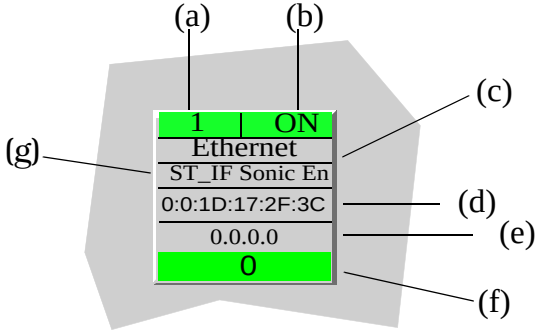
Figure 7: Interface Device View



Interface Icon

Figure 8 shows a close-up of a SmartSwitch Interface icon from an Interface Device view. Most of the informational labels on the icon also provide double-click access to other views, as explained in the following label descriptions.

Figure 8: Interface Icon



(a) Interface Number Label

(b) Interface Status Label

(c) Interface Type Label

(d) MAC Address Label

(e) Network Information Label

(f) Gauge Label

(g) Network Type Label (SmartSwitch Access devices only)

Interface Number Label

This label displays the interface number.

Interface Status Label

This label displays the current Operational Status of the interface (see Table 11). Note that the background color of the label also depends on the interface's current Administrative Status. For the SmartSwitch devices, this is set in the Interface Status View on Page 22, which can be accessed by double-clicking the label. Double-clicking this label in the CyberSWITCH device will open the Port Configuration view, which performs the same function.

Table 11: Interface Status Label Colors

Color	Operational Status	Administrative Status	Label Text
Green	ON	ON	ON
Blue	OFF	OFF	OFF
Yellow	OFF	ON	OFF
Red	Test	Test	Test

Interface Type Label

This label identifies the type of interface- e.g., Ethernet, FDDI, Other, etc. For the SmartSwitch devices, double-click this label to access the Device Configuration View on Page 67.

MAC Address Label

This label displays the physical (MAC) address of the interface. For the SmartSwitch devices, double-click the label to open the Interface Address Translation table, which cross-references network addresses (IP addresses) to physical (MAC) addresses for selected nodes between networks. Double-clicking on any column entry opens an address-specific Address Translation Table Information view. This view provides the same information as the corresponding row for the IF Address Translation table, but allows you to modify field values. For the CyberSWITCH devices, double-click this label to open the Model Information view for the application selected (see Model Information Views on Page 70).

Network Information Label

This label displays the IP address for the interface. Double-click the label to open the Secondary Address Panel on Page 22, which allows you to change the address and mask for this interface.

Gauge Label

This label displays whichever performance statistic has been selected in the Gauge Control panel for this device's interfaces (see ***SPECTRUM Views*** for more information). Double-click this label to open the CSIIfPort Performance View on Page 65.

Network Type Label

This label identifies the type of network the interface is connected to. Double-click the label to open the Model Information view for the application selected (see Model Information Views on Page 70).

CyberSWITCH Interface Icon Subviews Menu

Table 13 lists the Interface Icon Subviews menu options available for the CyberSWITCH devices.

Table 12: CyberSWITCH Interface Icon Subviews Menu

Option	Opens the...
Configuration	Port Configuration - CSIIfPort View on Page 68.
Secondary Address Panel	Secondary Address Panel on Page 22.
Protocols	**CtIpxRipApp > Performance or Configuration View** **CtIpOspfApp > Performance or Configuration View** **CtIpxSapApp > Performance or Configuration View** **See the *Routing Services Management Module Guide*.**
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

SmartSwitch Interface Icon Subviews Menu

Table 13 lists the Interface Icon Subviews menu options available for the SmartSwitch devices.

Table 13: SmartSwitch Interface Icon Subviews Menu

Option	Opens the...
Detail	Interface Detail view, which displays Packet, Error, and Discard Breakdown pie charts. For more information, see ***SPECTRUM Views***.
IF Status	Interface Status View on Page 22.
IF Configuration	Device Configuration View on Page 67.
IF Address Translation Table	Interface Address Translation Table view, which shows the Physical and Network address for each interface.
Secondary Address Panel	Secondary Address Panel on Page 22.
Thresholds	Interface Threshold view, which allows you to set the on/off alarm thresholds for: load, packet rate, error rate, and % discarded.

Table 13: SmartSwitch Interface Icon Subviews Menu (Continued)

Option	Opens the...
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

Interface Status View

Access: *From the **Icon Subviews** menu for the Device icon, select **IF Status**.*

This view provides the following information on the operational status of the interface and allows you to enable or disable the port:

Operational Status
The current state of the interface (`ON`, `OFF`, or `Testing`).

Administrative Status
This button allows you to select the desired operational state of the interface (`ON`, `OFF`, or `Testing`).

Secondary Address Panel

Access: *From the **Icon Subviews** menu for the Device Icon, select an Interface icon and then select **Secondary Address Panel.***

This panel provides a table of IP addresses and masks obtained from the Address Translation table within the device's firmware. You can change the current address displayed in the **IP Address** field by selecting an entry from the table in this panel and clicking the **Update** button.

Device Topology Views

This section provides brief descriptions of the Device Topology views available for models of the CyberSWITCH and SmartSwitch Access devices.

Device Topology views show the connections between a modeled device and other network entities. There are two kinds of Device Topology views available for the CyberSWITCH and SmartSwitch Access models:

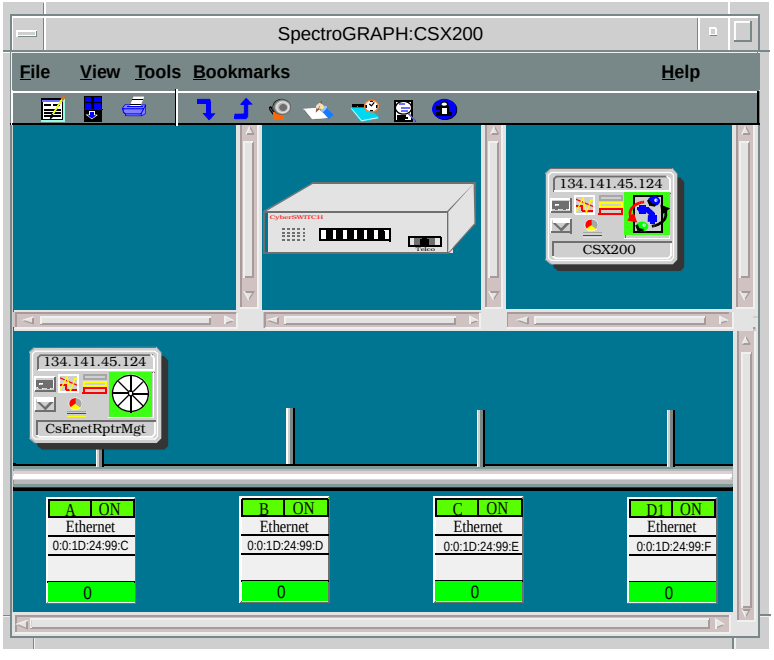
- *Device Topology View*
- *Repeater Device Topology View* (Page 24)

Device Topology View

Access: *From the **Icon Subviews** menu for the Device icon, select **DevTop**.*

The lower panel of the Device Topology view (Figure 9) uses interface icons to represent the device's serial/network I/O ports. These icons provide the same information and menu options as those in the Interface Device View. If there is a device connected to a particular interface, a device icon appears on the vertical bar above the interface icon.

Figure 9: Device Topology View



CsEnetRptrMgt Icon

The CsEnetRptrMgt icon represents the Repeater ports managed by the CSX200. It is displayed above the Interface icon to which the repeater is connected.

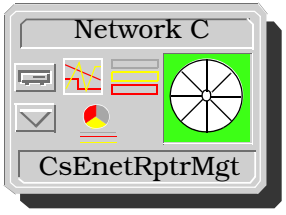


Table 14 lists the Icon Subviews menu options available from this icon.

Table 14: Repeater Menu Selections

Option	Opens the...
Devtop	Device Topology Views on Page 23.
Application	Application View on Page 26.
Configuration	Device Configuration View on Page 68.
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

Repeater Device Topology View

Access: *From **Icon Subviews** menu for the CsEnetRptrMgt Icon, select **DevTop**.*

This view displays Repeater Interface icons as well as icons representing the devices connected to the ports. The Device icon in the top right panel represents the repeater supported by the Device Topology view.

Repeater Interface Icon

Figure 10 shows an example of a Repeater Interface icon. It is composed of a Port Number, Status label (e.g., ON), a number of Packets Forwarded label, and a number of Collisions on this interface label. It also provides access to the views listed in Table 15.

Figure 10: Repeater Interface Icon

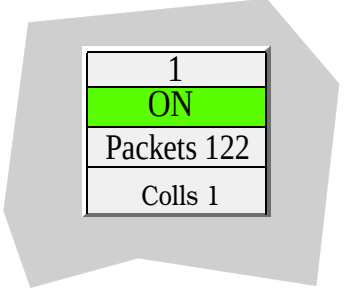


Table 15: Repeater Interface Icon Subviews Menu

Options	Opens the...
Port Notes	Notes view, which allows you to save noted information for a particular port.
Port Configuration	Port Configuration View (CSX200 only) on Page 69.
Enable/Disable Port	Enable/Disable dialog box, that allows you to enable or disable a selected port.

Application View

This section describes the Application view and the associated application-specific subviews available for models of the CyberSWITCH and SmartSwitch Access devices.

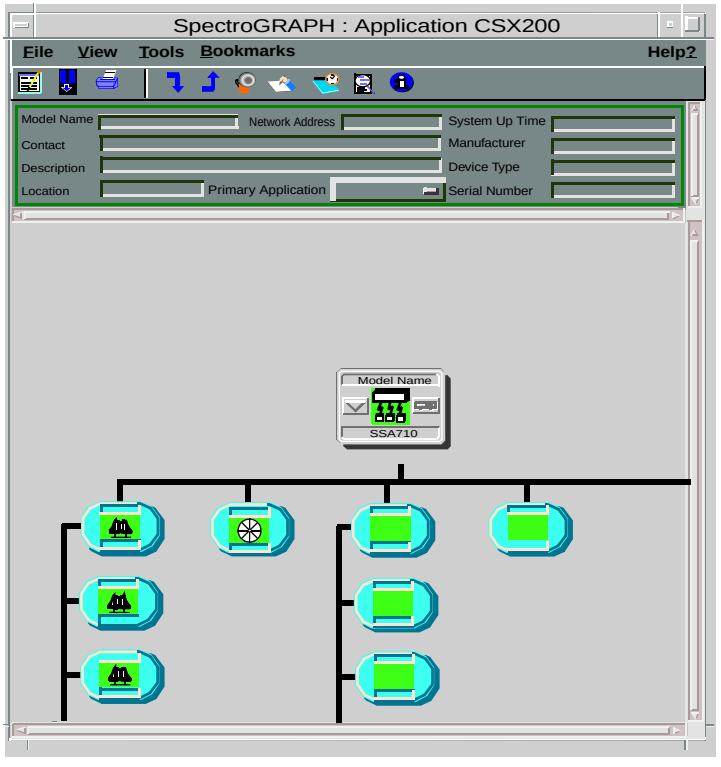
Access: *From the* ***Icon Subviews*** *menu for the Device icon, select* ***Application***

When a device is modeled, SPECTRUM automatically creates models for each of the applications supported by the device. The Application view displays these models (as Application icons), shows their current status, and provides access to application-specific subviews.

Figure 11 is an example of an Application view in its default mode (Icon) where each of the application models is represented by an Application icon. The Application icons are arranged hierarchically under a Device icon, with major applications in the top row and their respective minor applications stacked directly below.

You can also see the applications displayed by name only, in list format, by selecting **View > Mode > List**.

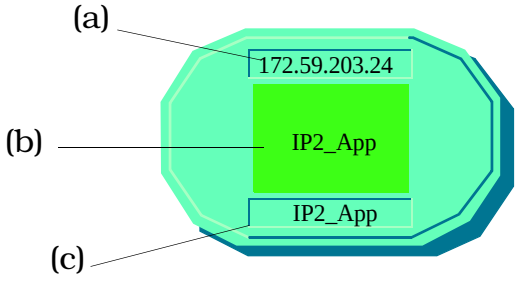
Figure 11: CyberSWITCH Application View



Application Icons

When the Application view is in Icon mode, each of the application models is represented by an Application icon (Figure 12). Double-clicking the Model Name label (a) at the top of the icon opens the associated Model Information view—see Model Information Views on Page 70. For some applications, the Model Type label (c) at the bottom of the icon is also a double-click zone, which opens an application-specific view. Any views accessible through these double-click zones are also accessible from the Application icon's **Icon Subviews** menu.

Figure 12: Application Icon



a Model Name Label / Model Information View

b Condition Status Label

c Model Type Label / Application-Specific View

Supported Applications

Many of the applications used by the CyberSWITCH and SmartSwitch Access devices are common to other devices managed by SPECTRUM and are described in the documents listed in Table 16.

The views and subviews available for CyberSWITCH and SmartSwitch Access device-specific applications are described in the rest of this section.

Table 16: Common Applications Supported

Application	Described in...
Enet SDB (Ct_BdgEnet_App)	***Bridging Applications***
PPP_Bridge (PPP_BdgApp1474)	***Bridging Applications***
Spanning Tree (Ct_Stp_App)	***Bridging Applications***
Static (Static_App)	***Bridging Applications***
Transparent (Transparent_App)	***Bridging Applications***
MIB-II (SNMP2_Agent)	***MIB II Applications***
ICMP (ICMP_App)	***MIB II Applications***
IP (IP2_App)	***MIB II Applications***
System (System2_App)	***MIB II Applications***
UDP (UDP2_App)	***MIB II Applications***
PPP (PPP_LCPApp1471)	***Miscellaneous Applications***
RS-232 (CtWANAppRS232)	***Miscellaneous Applications***
RS-232sync (RFC1317sync)	***Miscellaneous Applications***
WAN (CtWANApp)	***Miscellaneous Applications***

Table 16: Common Applications Supported

Application	Described in...
DS1 (CtWANAppDS1)	***Miscellaneous Applications***
Frame Relay (rfc1315App)	***Miscellaneous Applications***
Routing(GenRtrApp)	***Routing Applications***
IP Routing(IP2RtrApp)	***Routing Applications***
IP_Routing (CtIp2App)	Routing Services Management Module Guide
IP OSPF (CtIpOspfApp)	Routing Services Management Module Guide
Ip Rip (CtIpRipApp)	Routing Services Management Module Guide
IPX Routing(CtIpxApp)	Routing Services Management Module Guide
Ipx Rip(CtIpxRipApp)	Routing Services Management Module Guide
Ipx Sap(CtIpxSapApp)	Routing Services Management Module Guide

CyberSWITCH Applications

The following applications are specific to the CyberSWITCH devices and are described in this section:

- Bridging (CSIBridge).
- *InterHub Application (ih000App)*
- *Container Application (ContainerApp)* (Page 38)
- *Repeater Application (CsEntetRptrMgt)* (Page 41)

Note: The InterHub application is found in both CyberSWITCH and SmartSwitch Access devices but to avoid repetition, is described under **CyberSWITCH Applications**.

InterHub Application (ih000App)

This is the InterHub Application. The Icon Subviews menu associated with this application provides access to the views listed in Table 17.

Table 17: InterHub Icon Subviews Menu

Option	Opens the...
IH Resource Information	IH Resource View on Page 30.
IH Line Information	IH Line View on Page 31.
Data Link Information	IH Data View on Page 32.
LAN Port Information	IH LAN View on Page 33.
Community Name	Community Name View on Page 34.
Trap Receiver Details	IH Trap Receiver View on Page 34.
User Details	User Information View on Page 35.
Statistics Report	Statistic Report View on Page 36.
Status Report	Status Information View on Page 36.
InterHub Interface	InterHub Interface View on Page 37.
ISDN Usage Monitor	ISDN B-Channel Usage Information on Page 37.

Table 17: InterHub Icon Subviews Menu

Option	Opens the...
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

IH Resource View

Access: *From the **Icon Subviews** menu for the ih000App Application icon, select **IH Resource Information.***

This view provides a table that specifies the configuration for each of the resources plugged into the IH000 system. A resource is a computer adapter card that provides the physical interface for the attachment of lines to the IH000 system. The table provides the following information:

Index
A unique value that identifies a resource within the table.

Type
The type of the Resource. Possible values are: BASICRATE, BASICRATE_NET, T1_E1_PRI, EXPANDER, V35, RS232, ETHERNET_2 (2-port Ethernet), and ETHERNET_1 (1-port Ethernet).

Slot
The number of the slot in which the resource resides.

MemBase
The base address (in hex) within the memory map system at which the shared memory for a WAN resource resides.

I/IoBase
The starting I/O location (in hex) within the I/O space system at which the addressable I/O registers for a WAN resource reside.

InptNo
The interrupt number within the range of software interrupts to which the interrupt functions for a WAN resource are vectored.

SyncType
Each framed transmission line requires a clock source from which it must derive bit timing and channel timing relative to the start of a frame. If the value for this object is SLAVE, the clocking is derived from the received signal. If the value for this object is MASTER, the line must provide its own clocking from an internal source. For resources which are not Basic Rate or Primary Rate, this object will be NULL.

SwitchType
The switch type used by the resource. Possible values are: PRI_4ESS, PRI_5ESS, PRI_DMS100, PRI_DMS250, PRI_SL100, NET5, BRI_5ESS, BRI_LEGEND, BRI_DEFINITY, BRI_DMS100, BRI_NI1, NTT, BRI_1TR6, and BRI_NET3_BT. For resources that are not Basic Rate or Primary Rate, this object will be NULL.

Variant
A string which further describes the capability provided by a given switch type. Possible values are: NO_VARIANT, NET5 NORWAY, NET5 SWEDEN, NET5 UK, and TELEOS_VARIANT. For resources that are not Basic Rate or Primary Rate, this object will be NULL.

GenericNo.
This value identifies the software generic 16 AT&T#4ESS. AT&T #4ESS switches incorrectly coded an H0 channel map in generic 16 and earlier switch software. Generic 17 software corrects this problem. If the switch is using pre-generic 17 software, this value will be 16. If the switch is using pos-generic 16 software, this value will be 17. If the switch is not an AT&T #4ESS switch, this value will be 0.

IH Line View

Access: *From the **Icon Subviews** menu for the ih000App Application icon, select **IH Line Information.***

This view provides a table that specifies the configuration for each of the lines available to the IH000 system. A line is a physical connection from the IH000 system to a switched network, a dedicated network, or a local device. The table provides the following information:

Index
A unique value that identifies the line.

Name
A unique name used to identify a line attached to the IH000 system. This name can be up to 16 characters.

Type
The type of line. Possible values are: DEVICE, NETWORK, ISDN, T1, and E1.

Slot
The value of **Slot** (see ***Slot*** (Page 30)) that identifies the resource at which the line physically terminates.

Port
A number that identifies the physical port at which the line terminates. For RS232 lines, this

number has the following mapping: 1 = 1A, 2 = 1B, 3 = 2A, and 4 = 2B.

Interface
The terminal configuration used to connect devices via a communications link. Possible values are: POINT_TO_POINT and POINT_MULTIPOINT. For lines that do not terminate at a Basic Rate resource, this object will be NULL.

FramType
The framing type employed by a Primary Rate line. Possible values are: D4 (12-frame format) and ESF (24-frame format). For lines that do not terminate at a Primary Rate resource, this object will be NULL.

CodingType
The nature of the signals used to represent the binary one and zero at the physical layer. Possible values are: AMI (Alternate Mark Inversion) and B8ZS (Bipolar 8 Zero Substitution). For lines that do not terminate at a Primary Rate resource, this object will be NULL.

SglMethod
The method that dictates how and where the call signaling is to be carried. Possible values are: COMMON_CHANNEL and ROBBED_BIT. For lines that do not terminate at a Primary Rate resource, this object will be NULL.

BldOut
The degree of attenuation applied to the transmission signal in order to have the correct signal levels and shape arrive at the receiver. Possible values (in meters) are: 0_35, 25_65, 55_95, 85_125, 115_155, 145_185, and 175_210. For lines that do not terminate at a Primary Rate resource or that terminate at a resource with a switch type of NTT, this object will be NULL.

No. of Links
The number of data links using this line.

IH Data View

Access: *From the **Icon Subviews** menu for the ih000App Application icon, select **Data Link Information.***

This view provides a table that specifies the configuration for each of the data links used by the IH000 system. A data link is a logical Layer 2 link between the IH000 system and an ISDN switch that is governed by Q.921. It is used by Layer 3 to transport call control messages. Most switch types use a single data link for every line. However, DMS100 Basic Rate and National ISDN-1 Basic Rate switches use two data links. The table provides the following:

Index
A unique value used to identify the data link.

Line Name
The value identifying the line that will provide the connection for the data link.

LinkCES
The value of the Connection Endpoint Suffix (CES), which is used by the IH000 system to internally identify a data link.

LinkTEI
The Terminal Endpoint Identifier (TEI) for the data link. A TEI is a Layer 2 (Q.921) value used to address specific terminals connected to an ISDN line. A TEI value may be assigned by the network or pre-configured in the terminal.

LinkSPID
The Service Profile Identifier (SPID) for the data link. A SPID is a Layer 3 (Q.931) value used during ISDN terminal initialization to associate a particular set of capabilities and/or features with that terminal. A SPID value is supplied by the ISDN service provider.

Directory
The phone number identifying this data link. It will be compared with the Called Party Information Element specified in the incoming call to determine if this data link is to be used for the incoming call connection. This object only applies to DMS 100 Basic Rate lines.

VerifyDigits
The number of digits (beginning with the rightmost digit) of the Called Party Information Element specified in an incoming call to compare with the number specified in **Directory**, to determine if this data link is to be used for the incoming call connection. This object only applies to non-DMS 100 Basic Rate lines.

IH LAN View

Access: *From the **Icon Subviews** menu for the ih000App Application icon, select **LAN Port Information.***

This view contains a table which describes the configurable Spanning Tree Protocol parameters specific to each LAN port on the IH000 system. The table provides the following information:

Port Number
A unique value identifying the IH000 LAN port for which this entry contains Spanning Tree Protocol configuration data.

Port Priority
The value assigned to the priority byte in the 2 byte Port ID.

Port Path Cost
This port's contribution to the cost of a path to the root bridge.

Community Name View

Access: *From the **Icon Subviews** menu for the ih000App Application icon, select **Community Name.***

This view provides a table of SNMP community names and MIB access levels used by the IH000 SNMP agent to authenticate incoming SNMP request PDUs. The table provides the following information:

Community Index
A unique value that identifies a grouping of objects that define the configuration for an IH000 SNMP Community Name.

Community Name
An SNMP community name recognized by the IH000 SNMP agent if it is specified in an SNMP request PDU. This name is case-sensitive and may be up to 20 characters in length.

MIB Access Level
The MIB access rights available to the associated community name. Possible values are: GUEST (MIB-2 system group read-only access), USER (entire MIB-2 and networkExpress read-only access), and ADMIN (entire MIB-2 and networkExpress read-write access).

IH Trap Receiver View

Access: *From the **Icon Subviews** menu for the ih000App Application icon, select **Trap Receiver Details.***

This view provides a table specifying SNMP Trap Receiver configurations. A Trap Receiver is an SNMP management station that receives all SNMP Trap PDUs generated by the IH000 SNMP agent. The table provides the following information:

Trap Receiver In
A unique value that identifies a trap receiver.

Trap Receiver IP
The IP address of an SNMP management station that receives the trap PDUs.

Trap Rvr Community Name
The community name that should be used in the SNMP Trap PDUs.

User Information View

Access: *From the **Icon Subviews** menu for the ih000App Application icon, select **User Details.***

This view provides a table listing all qualified users of an InterHub system. The table is used, when InterHub Security is enabled, to identify and validate or reject all incoming calls. The table contains the following information:

Name
The user name.

CallLineID
An ASCII string that matches the Calling Line ID that will arrive with the telephone call.

CallLineIDTwo
If a user is authorized to call in from a second telephone line, this field provides an ASCII string that matches the Calling Line ID that will arrive with a telephone call from that line.

LineIDThree
If a user is authorized to call in from a third telephone line, this field provides an ASCII string that matches the Calling Line ID that will arrive with a telephone call from that line.

LineIDFour
If a user is authorized to call in from a fourth telephone line, this field provides an ASCII string that matches the Calling Line ID that will arrive with a telephone call from that line.

UserIPHostID
For users identified via a Host Identification exchange, this provides an ASCII string that must match the user's Host ID.

UserIPAddr
When the InterHub is used as an IP router, this field provides the IP address for the associated user.

TableIndex
A unique value that identifies a group of objects which contain all the InterHub information.

Statistic Report View

Access: *From the **Icon Subviews** menu for the ih000App Application icon, select **Statistics Report.***

This view provides a listing of the current IH000 system statistic report messages as the messages would appear at the system console if the “DS” command were entered. The table includes:

Report Index
A unique value used to identify an entry within the table.

Report Message
A message exactly as it is reported at the IH000 system console, including the time that the report was posted and the internal statistic code. This message may be a statistics header or it may contain actual statistics.

Status Information View

Access: *From the **Icon Subviews** menu for the ih000App Application icon, select **Status Report.***

This view provides a listing of the current IH000 system status report messages as the messages would appear at the system console if the “DR” command were entered. The table includes the following information:

Status Report Index
A unique value identifying an entry within the table.

Status Report Message
A status message exactly as it is reported at the IH000 system console, including the message classes, which are: (E)rror, (I)nformation, or (W)arning. Also included is the time that the report was posted; and the internal status code.

InterHub Interface View

Access: *From the **Icon Subviews** menu for the ih000App Application icon, select **InterHub Interface.***

This view provides a table of the current interfaces attached to the InterHub system and specifies the operational status of each interface. The table provides the following information:

ID
A unique value used to identify an entry within this table.

Name
A name which, together with **Slot** and **Port** (both described below), uniquely identifies the interface.

Type
The type of interface. The possibilities are: ethernet, basicRateDChannel, basicRatePermanent, primaryRateDChannel, primaryRatePermanent, v35, rs232, x25Access, and frameRelayAccess.

Slot
The physical slot to which the interface is attached.

Port
The physical port to which the interface is attached. For RS232 interfaces, this number has the following mapping: 1 = 1A, 2 = 1B, 3 = 2A, and 4 = 2B.

Status
The current operational status of the interface. Possible values are: up or down.

ISDN B-Channel Usage Information

Access: *From the **Icon Subviews** menu for the ih000App Application icon, select **ISDN Usage Monitor.***

This view allows you to monitor B-Channel traffic. It provides the following information:

B-Channels Available
The number of ISDN B-channels available for use. Note that dedicated B-channels are not included in this count.

Monitor Reset
This object acts as a reset flag for **B-Channels Highwater** and **Elapsed Time**. It normally has a value of false (2). When it is set to true (1), the value of **B-Channels Highwater** is reset to the current value of **B-Channels In Use**, and the value of the **Elapsed Time** is reset to zero. The value of this object is then returned to its normal operating value of false (2).

B-Channels InUse
The current number of ISDN B-channels in use. Note that dedicated B-channels are not included in this count.

Trap Enabled
Indicates whether the InterHub is permitted to generate traps.

Elapsed Time
The elapsed time (in hundredths of a second) since the monitoring of **B-Channels Highwater** began. This value is reset when **Monitor Reset** is set to `true` (1).

B-Channels Highwater
The maximum value of **B_Channels in Use** during the time period specified by **Elapsed Time**.

Trap Trigger
When the value of **B_Channels In Use** meets. exceeds, or falls below this value, a trap is generated.

Container Application (ContainerApp)

This is the Container Application. The Icon Subviews menu associated with this application provides access to the views listed in Table 18.

Table 18: Container Application Menu

Option	Opens the...
Container Resource	Container Resource Information View on Page 39.
Container Type	Container Type Report View on Page 39.
Logical Information	Container Logical Information View on Page 40.
Physical Information	Container Physical Information View on Page 40.
Community String	Container Network Address Information View on Page 41.
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

Container Resource Information View

Access: *From the **Icon Subviews** menu for the ContainerApp Application icon, select **Container Resource.***

This table defines the physical resources that may be utilized by a given physical module within the container. It displays the following information:

ID
A unique index that defines a specific physical resource.

Type
The type of physical resource.

Mib Pointer
A pointer to a MIB that contains specific information about the resource.

Container Type Report View

Access: *From the **Icon Subviews** menu for the ContainerApp Application icon, select **Container Type Information.***

This view contains the following information:

Type of Device
Identifies the type of device or container.

Type of Physical Entries
The number of slots in the device.

Type of Physical Changes
The number of physical changes that have occurred to this MIB. This includes additions and removal of components in the component table.

Containing Physical Entries
Number of slots in the container in which the device is installed.

Serial Number
The revision level of the device.

Containing Physical Entry ID
The slot number in a container in which the device is installed.

Type of Logical Changes
The number of logical changes that have occurred to this MIB.

Container Logical Information View

Access: *From the **Icon Subviews** menu for the ContainerApp Application icon, select **Logical Information**.*

This view contains a table that provides information about the components installed in the container, including:

ID
A unique value used to identify a component.

Type
A component within this container.

Name
A description of the component.

Version
A description of the version/revision level for this component's software.

ROC Com
The read-only community string used to access MIBs registered to this component.

RWCommStr
The read/write community string used to access MIBs registered to this component.

SUCommStr
The super user community string used to access MIBs registered to this component.

AdminStatus
The Administrative status of the component. Possible values are: enabled, disabled, and reset.

OperStatus
The operational status of the component. Possible values are: unknown, enabled, testing, operational, error, disabled, and delete.

Container Physical Information View

Access: *From the **Icon Subviews** menu for the ContainerApp Application icon, select **Physical Information**.*

This view contains the Physical Entry Table, which provides the following information about individual modules installed in the container:

ID
The slot number containing this module.

Entries
The number of slots that this module occupies. Some modules require more than one physical front panel slot while only using a single back panel slot.

Entry Class
The class (or type) of slot.

Entry Type
A value that uniquely defines the module type.

Time Stamp
The time this module was last re-initialized.

Entry Status
The module status. Possible values are: active, initial, etc...

Container Network Address Information View

Access: *From the **Icon Subviews** menu for the ContainerApp Application icon, select **Community String.***

This view provides information used to maintain and control the network addresses that manage this device, including the following information:

Index
A unique value identifying a network address within the container.

Network Type
The Network type, e.g., Inband, etc...

Net Address
The network address of the device.

Repeater Application (CsEntetRptrMgt)

This is the Ethernet Repeater application, the Icon Subviews menu associated with this application provides access to the views listed in Table 19.

Table 19: CsEnetRptrMgt Icon Subviews Menu

Option	Opens the...
DevTop	Repeater Device Topology View on Page 24.
Configuration	Repeater Configuration View (CSX200 only) on Page 69.
Model Information	Model Information view for the selected application. See Model Information Views on Page 70.

SmartSwitch Applications

The following applications are specific to the SmartSwitch Access devices. Those applications that have Icon Subviews menu selections other than Model Information view, are described in this section.

- *SSA_CMMContApp* (Page 42)
- *SSA_DAApp* (Page 46)
- *SSA_MsgXferApp* (Page 47)
- *SSA_AapslogApp* (Page 49)
- *SSA_BufferApp* (Page 50)
- *SSA_DS0App* (Page 52)
- *SSA_IsdnApp* (Page 54)
- *SSA_LineStsApp* (Page 56)
- *SSA_MemoryApp* (Page 58)
- *SSA_ShRAMApp* (Page 60)
- *SSA_WANConnApp* (Page 60)
- *SSA_WANDevApp* (Page 62)

SSA_CMMContApp

This is the CMM application. The Icon Subviews menu associated with this application provides access to the views listed in Table 20.

Table 20: SSA_CMMContApp Icon Subviews Menu

Option	Opens the...
Board Information	Board Information Table View on Page 42.
Module Information	Module Information Table View on Page 45.
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

Board Information Table View

Access: *From the* ***Icon Subviews*** *menu for the SSA_CMMContApp Application icon, select* ***Board Information.***

This view contains a board table, which provides information on the configuration and operational status of the CMM board. Double-clicking an entry within this table opens the Board Information view which allows you to set the

Board Administrative Status as well as the **Upgrade** and **Commit** Flags. The Board Information Table view contains the following information:

Board Type
The type of board.

NumModules
The number of CMM modules contained on this CMM circuit board.

ModuleNumModems
Number of modems per CMM module.

TFTP Server
The IP address of the TFTP server where the object code for CMM modules resides.

Upgrade Path
The path to the object code for CMM modules on the TFTP server.

Upgrade Flag
A flag that indicates whether to upgrade the software for the CMM modules on the board.

Commit Flag
A flag that indicates whether to commit the software for the CMM modules on the board.

Modem Reset Limit
The number of times that a modem can be reset within a given time span before it is declared to be faulty.

Modem Reset Time
The time span (in minutes) during which the given number of resets must occur before the modem is declared to be faulty.

Outgoing Inactivity Timeout
The duration (in seconds) of a period of inactivity before an outgoing call is terminated.

Incoming Inactivity Timeout
The duration (in seconds) of a period of inactivity before an incoming call is terminated.

AsyncBaseOrigATMCmdStr
The default or base set of AT commands to be used when originating an async call.

AsyncBaseAnswerATMCmdStr
The default or base set of AT commands to be used when answering an async call.

AsyncOperOrigATMCmdStr
The operative set of AT commands to be used when originating an async call.

HdlcBaseOrigATMCmdStr
The default or base set of AT commands to be used when originating a High-Level Data Link Control (HDLC) call.

HdlcBaseAnswerATMCmdStr
The default or base set of AT commands to be used when answering an HDLC call.

HdlcOperOrigATMCmdStr
The operative set of AT commands to be used when originating an HDLC call.

HdlcOperAnswerATMCmdStr
The operative set of AT commands to be used when answering an HDLC call.

BoardAdminStatus
The administrative status of the CMM board. See Table 21.

Table 21: Board Administrative Status Values

Value	Description
down	All modems that belong to this board are to be removed from service immediately.

Table 21: Board Administrative Status Values (Continued)

Value	Description
leave-service	Each modem that belongs to this board is to be removed from service at the completion of its current call, if any.
up	Each modem that belongs to this module is available for accepting calls.
upgrade	All modules that belong to this board are to be reloaded with new software and restarted.

BoardOperStatus
The operational status of the CMM board. See Table 22.

Table 22: Board Operational Status Values

Value	Description
initializing	All modules that belong to this board are booting up or in the process of a software upgrade.

Table 22: Board Operational Status Values

Value	Description
active	All modules that belong to this board are available for accepting calls.
leaving-service	All modules that belong to this board are functional but are no longer available for accepting calls. (Existing calls are allowed to terminate normally.)
out-of-service	None of the modules that belong to this board are available for accepting calls nor do they have any existing calls.
faulty	All modules that belong to this board are unusable.
impaired	The board is otherwise active but one or more modules are in the out-of-service, initializing, testing, faulty, or impaired states.

Module Information Table View

Access: *From the* ***Icon Subviews*** *menu for the SSA_CMMContApp Application icon, select* ***Module Information.***

This table provides configuration and status information about all CMM modules present on each CMM board in this unit. Double-clicking on any entry within this table opens the Module Information view, which allows you to set the Administrative Status for a selected module. The Module Information Table View includes the following information:

Module Id
A value that uniquely identifies the CMM module.

DpramSize
Size of the DPRAM (in bytes) on the CMM module.

SdramSize
Size of the SDRAM (in bytes) on the CMM module.

CpuType
Type of CPU, values are unknown, hitachish3, and hitachish4.

CpuSpeed
CPU speed (in Megahertz).

CpuFwRev
Revision version number of the CPU's firmware.

EpldID
EPLD identification number.

EpldRev
EPLD firmware revision number.

NumBadModems
The number of bad modems on the CMM module.

ModuleAdminStatus
The administrative status of the module. See Table 23.

Table 23: Module Administrative Status Values

Value	Description
down	All modems that belong to this module are to be removed from service immediately.
leave-service	Each modem that belongs to this module is to be removed from service at the completion of its current call, if any.
up	Each modem that belongs to this module is to become available for accepting calls.
run-diagnostics	All modems that belong to this module are to run a series of comprehensive on-line diagnostic tests.
reset	The entire module is to be physically reset.
faulty	The entire module is to be immediately removed from service and considered unusable.

ModuleOperStatus
The operational status of the CMM module. Possible values are listed in Table 22 (Page 44).

SSA_DAApp

This is the Demand Access Registry application. The Icon Subviews menu associated with this application provides access to the views listed in Table 24.

Table 24: SSA_DAApp Icon Subviews Menu

Option	Opens the...
Demand Access (DA) Registry	Demand Access (DA) Registry Table View on Page 46.
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

Demand Access (DA) Registry Table View

Access: *From the **Icon Subviews** menu for the SSA_DAApp Application icon, select **Demand Access (DA) Registry.***

This view contains the Demand Access Registry Table which provides configuration and status

information about On Demand Access WAN firmware components within this device. Double-clicking on any of the entries within the table will open the DA Registry view, which allows you to set the Administrative status of the selected entry. The Demand Access Registry Table View contains the following information:

Index
A unique value identifying this object.

Instance
An instance of this object.

AdminStatus
The desired state of the subsystem. Possible values are: up, down, and testing.

OperStatus
The mandatory operational state of the subsystem.

LastChange
The value of "sysUpTime" at the time the subsystem entered its mandatory operational state.

Descr
A description of the subsystem.

SSA_MsgXferApp

This is the Message Transfer application. The Icon Subviews menu associated with this application provides access to the views listed in Table 25.

Table 25: SSA_MsgXferApp Icon Subviews Menu

Option	Opens the...
Message Transfer Service	Message Transfer Service Table View on Page 47.
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

Message Transfer Service Table View

Access: *From the **Icon Subviews** menu for the SSA_MsgXferApp Application icon, select **Message Transfer Service.***

This table provides configuration information about the flow of both control and data messages sent across a shared memory processor interface via the Message Transfer Service (MTS). It provides the following information:

InstanceID
A value that uniquely identifies this instance of the Message Transfer Service.

MBusID
A value that uniquely identifies the MBus module on which the MTS runs.

NumOfMTSUsers
The number of users currently subscribed to use the MTS.

NumOfMTSBuffers
The number of buffers in the shared memory interface available for transferring user messages.

SizeOfMTSBuffers
The size of buffers used in the shared memory interface available for transferring user messages.

NumOfPostedMsgs
The number of messages posted to the MTS for transfer.

NumOfPostedBytes
The number of user data bytes posted to the MTS for transfer.

NumOfPostedPriorityMsgs
The number of high priority messages posted to the MTS for transfer.

NumOfPostedPriorityBytes
The number of high priority user data bytes posted to the MTS for transfer.

NumOfSentMsgs
The number of messages sent by the MTS.

NumOfSentBytes
The number of user data bytes sent by the MTS.

NumOfPendingMsgs
The number of messages waiting to be transferred via the MTS.

NumOfPendingBytes
The number of bytes of user data waiting to be transferred via the MTS.

HighWaterForPendingMsgs
The highest value for the number of messages waiting to be transferred via the MTS.

HighWaterForPendingBytes
The highest value for the number of bytes of user data waiting to be transferred via the MTS.

NumOfTransmissions
The number of times a message or messages were sent by the MTS.

NumOfReceptions
The number of times a message or messages were received by the MTS.

NumOfReceivedMsgs
The number of messages received by the MTS.

NumOfRcvNoBufs
The number of messages discarded, due to a lack of buffer space available to hold the received messages.

NumOfRcvNoUser
The number of messages discarded as a result of not having a user registered for the received message type.

SSA_AapslogApp

This is the Application Log application, the Icon Subviews menu associated with this application provides access to the views listed in Table 26.

Table 26: SSA_AapslogApp Icon Subviews Menu

Option	Opens the...
Client/Server Log Configuration	Client/Server Log Configuration View on Page 49.
Log Information View	Log Information View on Page 50.
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

Client/Server Log Configuration View

Access: *From the **Icon Subviews** menu for the SSA_Aapslog Application icon, select **Client/Server Log Configuration.***

This view contains a Client Configuration Table that displays the types of messages that will be logged and the types that will be displayed in the *Log Information View* (Page 50), on a per client basis. For each client, this table contains a client identification number (**ClientID**), client name (**ClientName**), and an entry labeled **persistent**, which, when enabled, makes client settings persistent across restarts. In addition to the above entries, the table contains the following entries for each client, which, when enabled, will be appended to the log that is displayed in the *Log Information View* (Page 50):

- **LogStatus**
- **FreezeLogStatus**
- **ErrLogStatus**
- **CriticalLogStatus**
- **StatusLogStatus**
- **InfoLogStatus**
- **DebugLogStatus**

The table also contains the following entries for each client, which, when enabled, will be displayed within the log window of the *Log Information View* (Page 50):

- **DisplayStatus**
- **FreezeDisplayStatus**
- **ErrDisplayStatus**
- **CriticalDisplayStatus**
- **StatusDisplayStatus**
- **InfoDisplayStatus**
- **DebugDisplayStatus**

Double-clicking on any of the above entries opens the Client Configuration view, which allows you to enable or disable these entries. In addition to the information above, the Client Configuration Table contains a Server Log Configuration section which contains the following information:

Auto Freeze

When enabled, logging a FREEZE level message will prevent any additional messages from being logged.

Admin Status

The status of the message logging system and the log itself. If disabled, clients cannot append messages to the log.

Last Change

The value of "sysUpTime" at the last change to **Auto Freeze** or **Admin Status**.

Log Information View

Access: *From the **Icon Subviews** menu for the SSA_AapsLogApp Application icon, select **Log Information.***

This view contains Log Table information, including a Recovered Log Table section that displays log messages recovered due to system shutdown or power failure. This view also gives you the ability to move up or down in the log window and reset the log window to the beginning of the log table. In addition, you can filter out log entries by entering a desired "match" string in either the **Event** or **Client** fields and only those entries that contain the desired string will be displayed in the Log Table.

SSA_BufferApp

This is the Buffer application, the Icon Subviews menu associated with this application provides access to the views described in Table 27.

Table 27: SSA_BufferApp Icon Subviews Menu

Option	Opens the...
Buffer Pool Information	Buffer Pool Information Table View on Page 51.

Table 27: SSA_BufferApp Icon Subviews Menu (Continued)

Option	Opens the...
Buffer Leak Information	Buffer Leak Information Table View on Page 51.
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

Buffer Pool Information Table View

Access: *From the **Icon Subviews** menu for the SSA_BufferApp Application icon, select **Buffer Pool Information.***

This view contains the Buffer Pool Info Table view, which provides the following information on the configuration and status of buffers in the device. Double-clicking on any entry within the table opens the Buffer Pool Information view, which allows you to set **bufferPoolStatus**.

bufferMgrID
Identifies which subsystem or buffer manager owns this particular buffer pool.

bufferSize
Size of buffers (in bytes) in this pool.

bufferCount
Total number of buffers in this pool.

bufferUsage
Number of buffers from this pool currently in use.

bufferFree
Number of free buffers remaining in this pool.

bufferLowWater
Minimum number of free buffers available in this pool. This value is updated during operation.

bufferPoolStatus
When disabled, buffers will not be distributed to the system.

bufferLeakAnalysis
When enabled, tracking of the buffer pool will occur.

Buffer Leak Information Table View

Access: *From the **Icon Subviews** menu for the SSA_BufferApp Application icon, select **Buffer Leak Information.***

This view contains the Buffer Leak Info Table, which provides a list of buffer nodes that have been handed out by the buffer manager but not yet returned to the proper buffer pool. It includes the following information.

bufferLeakAddress
Address of the buffer in the system.

bufferLeakSize
Size (in bytes) of the buffer associated with this table entry.

bufferLeakRip
The return instruction pointer (RIP) from the request for the buffer. This will typically indicate who originally did a `GetBuff()` call with the buffer manager.

BufferLeakRipRip
A return pointer one level up from **bufferLeakRip** in case **bufferLeakRip** still provides ambiguous information.

SSA_DS0App

This is the DS0 Application, the Icon Subviews menu associated with this application provides access to the views described in Table 28.

Table 28: SSA_DS0App Icon Subviews Menu

Option	Opens the...
Configuration	Configuration View on Page 52.
IF Information	IF Information View on Page 53.

Table 28: SSA_DS0App Icon Subviews Menu

Option	Opens the...
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

Configuration View

Access: *From the **Icon Subviews** menu for the SSA_DS0App Application icon, select **Configuration.***

This view contains the ISDN lapd Table, which provides configuration and operational parameters for all ISDN signaling channels on this managed device. Double-clicking any entry within this table opens the ISDN lapd view, which allows you to set the Administrative Status for the selected entry. This table contains the following information:

DSX0ConfigLineId
Line id of the ISDN lapd table entry.

DSX0ConfigAdminStatus
Administrative status for the ISDN lapd table entry.

DSX0ConfigOperStatus
Operational status for the ISDN lapd table entry.

IF Information View

Access: *From the **Icon Subviews** menu for the SSA_DS0App Application icon, select **IF Information.***

This view contains the IF Table, which supplies the following information.

IfIndex
A unique value that identifies the interface.

IfDescr
A description of the interface, including the name of the manufacturer, the product name, and the version of the interface hardware/software.

Type
The type of interface. Possible values are: ethernet, sonet, etc...

Mtu
The size of the largest packet (in octets) that can be sent/received on the interface.

Speed
An estimate of the interface's current bandwidth, in bits per second.

PhysAddress
The interface's address at its protocol sub-layer.

AdminStatus
The desired state of the interface. Possible values are: up, down, dormant, testing, unknown.

OperStatus
The current operational state of the interface.

LastChange
The value of "sysUpTime" at the time the interface entered its current operational state.

InOctets
The total number of octets received on the interface, including framing characters.

InUcastPkts
The number of packets, delivered by this sub-layer to a higher (sub-)layer, that were not addressed to a multicast or broadcast address at this sub-layer.

InDiscards
The number of inbound packets that were chosen to be discarded even though no errors had been detected to prevent their delivery to a higher-layer protocol. One possible reason for discarding such a packet could be to free up buffer space.

InErrors
For packet-oriented interfaces, the number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol. For character-oriented or fixed-length interfaces, the number of inbound transmission units that contained errors preventing them from being deliverable to a higher-layer protocol.

InUnknownProtos
For packet-oriented interfaces, the number of packets received that were discarded because of an unknown or unsupported protocol. For character-oriented or fixed-length interfaces that support protocol multiplexing, the number of transmission units received via the interface which were discarded because of an unknown or unsupported protocol. For any interface which does not support protocol multiplexing, this counter will always be 0.

OutOctets
The total number of octets transmitted from this interface, including framing characters.

OutUcastPkts
The total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent.

OutDiscards
The number of outbound packets that were chosen to be discarded even though no errors had been detected to prevent their transmission. e.g., to free up buffer space.

OutErrors
For packet-oriented interfaces, the number of outbound packets that could not be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that could not be transmitted because of errors.

SSA_IsdnApp
This is the ISDN Application, the Icon Subviews menu associated with this application provides access to the views described in Table 29.

Table 29: SSA_IsdnApp Icon Subviews Menu

Option	Opens the...
ISDN Common Configuration	ISDN Common Configuration Table View on Page 55.
Line Information View	ISDN Line Configuration Table View on Page 55.
Call Information View	ISDN Call Information View on Page 55.
Model Information	Model Information view for the selected application. See Model Information Views on Page 70.

ISDN Common Configuration Table View

Access: *From the **Icon Subviews** menu for the SSA_IsdnApp Application icon, select **ISDN Common Configuration.***

This view contains the ISDN common table, which displays configuration and operational parameters for all ISDN signaling entries on this managed device. Double-clicking any entry within this table opens the ISDN Common Configuration view, which allows you to set the **SwitchVariant**, **SwitchGeneric**, and **SwitchType** values. The table contains the following information:

SwitchVariant
The switch variant for all ISDN signalling entries. Only certain values are valid for certain switch types.

SwitchGeneric
The switch generic for all ISDN signalling entries.

OutCallDelay
The minimum delay (in milliseconds) between outbound calls for all ISDN signalling entries.

BadCallDelay
The minimum delay (in milliseconds) between bad outbound calls for all ISDN signalling entries.

ISDN Line Configuration Table View

Access: *From the **Icon Subviews** menu for the SSA_IsdnApp Application icon, select **Line Information View.***

This view contains the ISDN Line Configuration Table, which contains configuration and operational information for all ISDN lines. This information includes a **LineId** that identifies the entry in the table. The remaining fields are flags that indicate whether a trace should be initiated at that level (e.g. **L2Trace** indicates whether a trace should be initiated at Level 2).

ISDN Call Information View

Access: *From the **Icon Subviews** menu for the SSA_IsdnApp Application icon, select **Call Information View.***

This view contains the ISDN Call Info Table, which supplies the following information:

CallId
Call identification tag for each entry in the table.

SMUserConnId
The signaling method (SM) user's connection ID for this call.

LineId
The line ID of this call.

Ces
The call's connection endpoint suffix (CES).

State
The current state of the call.

CalledNumber
The "called" ISDN address.

CalledSubAddress
The "called" ISDN subaddress.

CallerNumber
The "caller's" ISDN address.

CallerSubAddress
The "caller's" ISDN subaddress.

DataRate
The data rate of the call.

Bearers
Map of bearers used in the call.

ConnectionType
The type of connection requested.

TransferCapability
The Information Transfer Capability for the current or last call.

Origin
The origin for the current or last call.

SetupTime
The value of "sysUpTime" when the ISDN setup message for the current or last call was sent or received.

ConnectTime
The value of "sysUpTime" when the ISDN connect message for the current or last call was sent or received.

ChargedUnits
The number of charged units for the current or last connection.

SSA_LineStsApp

This is the Line Statistics Application, the Icon Subviews menu associated with this application provides access to the views described in Table 30.

Table 30: SSA_LineStsApp Icon Subviews Menu

Option	Opens the...
Line Statistics	Line Statistics Table View on Page 57.
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

Line Statistics Table View

Access: *From the **Icon Subviews** menu for the SSA_LineStsApp Application icon, select **Line Statistics.***

This view contains the DS1 Line Statistics table, which provides statistics gathered at Layer 1 for a WAN port. The statistics include counts for qualified alarms and total alarms. A qualified alarm is an alarm whose presence has been detected for a finite amount of time (called its integration period). This view contains the following information:

LineIndex
The physical line index for this port.

Layer1Up
The number of times Layer 1 has been brought up (by a higher level software entity or administrator) or has come up due to the disintegration of an alarm.

Layer1Down
The number of times Layer 1 has been taken down (by a higher level software entity or administrator) or has gone down due to the disintegration of an alarm.

Layer1LOS
The number of times Layer 1 has detected a Loss of Signal (LOS).

Layer1LOF
The number of times Layer 1 has detected a Loss of Frame (LOF).

Layer1RAI
The number of times Layer 1 has detected a Remote Alarm Indication (RAI).

Layer1AIS
The number of times Layer 1 has detected an Alarm Indication Signal (AIS).

Layer1LOSAll
The number of times Layer 1 has detected an LOS. This includes both qualified and unqualified Losses of Signal.

Layer1LOFAll
The number of times Layer 1 has detected an LOF. This includes both qualified and unqualified Losses of Frame.

Layer1RAIAll
The number of times Layer 1 has detected an RAI. This includes both qualified and unqualified Remote Alarm Indications.

Layer1AISAll
The number of times Layer 1 has detected an AIS. This includes both qualified and unqualified Alarm Indication Signals.

Layer1Interrupts
The number of interrupts seen at Layer 1.

Layer1ClearStats
A value in this field indicates that all statistics associated with this entry will be cleared.

SSA_MemoryApp

This is the Memory application, the Icon Subviews menu associated with this application provides access to the views described in Table 31.

Table 31: SSA_MemoryApp Icon Subviews Menu

Option	Opens the...
Memory Analysis	Memory Analysis View on Page 58.
Model Information	Model Information view for the selected application. See Model Information Views on Page 70.

Memory Analysis View

Access: *From the **Icon Subviews** menu for the SSA_MemoryApp Application icon, select **Memory Analysis.***

This view contains information about device memory, including a table on memory leakage. The table contains the following information:

heapSize
Total heap size on the system, given in bytes.

heapFree
Amount of space on heap not presently in use, given in bytes.

blockSize
Size used by memory subsystem as a basic allocation unit, given in bytes.

nodeSize
Minimum number of blocks the memory subsystem can use for allocating a single node.

numNodes
Number of free nodes presently in the system.

numFrags
Number of free nodes that are classified as memory fragments (less than 128 bytes in size).

searchDepthShort
Average number of nodes a `malloc` request has searched before finding an appropriate node. The short search depth indicates the average over the last few thousand memory operations.

sizeAvgShort
Average size of a `malloc` request, in blocks. This value indicates the average over the last thousand memory operations.

searchDepthLong
Average number of nodes a `malloc` request has searched before finding an appropriate node. The long search depth indicates the average over the last few million memory operations.

sizeAvgLong
Average size of a `malloc` request in blocks. This value indicates the average over the last million memory operations.

leakAnalysis
Used to enable and disable the mallocLeakTable. Enabling leak analysis clears out any old entries before starting a collection of new data.

Leak Table

This section of the Memory Analysis View provides the following information for each of the allocated memory nodes that have not been deallocated:

leakaddress
Address of the allocated node in the system.

leakRip
Text representing the return instruction pointer from the allocation. This will typically indicate where a call to `malloc()` was made either using an instruction pointer or a file/line number pair.

leakRipRip
Text representing the return instruction pointer from the routine that called the allocation routine. This will typically indicate where a call to `new` was performed in the system either using an instruction pointer or a file/line.

SSA_ShRAMApp

This is the Shared Memory application, the Icon Subviews menu associated with this application provides access to the views described in Table 32.

Table 32: SSA_ShRAMApp Icon Subviews Menu

Option	Opens the...
Shared RAM Information	Shared RAM Information View on Page 60.
Model Information	Model Information view for the selected application. See Model Information Views on Page 70.

Shared RAM Information View

Access: *From the **Icon Subviews** menu for the SSA_ShRAMApp Application icon, select **Shared RAM Information.***

This view contains information about Shared RAM on the device, including how much SRAM the device contains and how much is free (in bytes). In addition, this view contains a table of all Shared RAM blocks used by any subsystem, including, which subsystem is using the Shared RAM and how much it is using.

SSA_WANConnApp

This is the WAN Connection application, the Icon Subviews menu associated with this application provides access to the views described in Table 33.

Table 33: SSA_WANConnApp Icon Subviews Menu

Option	Opens the
WAN Connection Information	Wan Connection Info Table View on Page 60.
Model Information	Model Information view for the selected application, see Model Information Views on Page 70.

Wan Connection Info Table View

Access: *From the **Icon Subviews** menu for the SSA_WanConnApp Application icon, select **WAN Connection Information.***

This view provides a table that supplies configuration and operational information on all Demand Access remote WAN connections to the device, including the following information:

ConnectionIndex
A value that uniquely identifies the Connection.

ConnectionIfIndex
The value of the WAN connection group.

ConnectionState
The state of the Connection. See Table 34.

Table 34: Connection State Values

Value	Description
inactive	The call is inactive.
connecting	An outbound call attempt is being made.
connected	An incoming call is connected and being validated.
active	The call is active.
disconnecting	An outgoing disconnect is being processed.
disconnected	An incoming disconnect is being processed.

ConnectControl
The desired state of the wan Connection.

ConnectType
The type of the wan connection. Possible values are: digitalcircuit and analogcircuit.

DeviceIndex
The index of the device associated with this connection.

ConnectSpeed
The information transfer speed (in bits/second) when calling this peer.

LocalAddress
Call Address at which the connection will originate from.

PeerAddress
The calling party number information element, as would be passed in an ISDN SETUP message by a PBX or switch for incoming calls.

SubAddress
Subaddress from which the connection will originate.

InfoType
The Information Transfer Capability for this connection. Possible values are: speech, unrestrictedDigital, unrestrictedDigital156, restrictedDigital, audio, audio31, video, packetSwitched, fax, and other.

ChargedUnits
The number of charged units for this connection.

ConnectTime
The value of "sysUpTime" when this connection was completed.

ConnectDirection
The direction from which this connect occurred.

DisconnectTime
The value of "sysUpTime" when this call was disconnected.

DisconnectDirection
The direction from which this disconnect occurred. Possible values are: in or out.

DisconnectCause
The encoded network cause value associated with this call (see **DisconnectText** below).

DisconnectText
The reason for this call's termination. This entry exists because it would be impossible for a management station to store all possible cause values for all types of interfaces. It should be used only if a management station is unable to decode the value of **DisconnectCause.**

SSA_WANDevApp

This is the WAN Device Application, the Icon Subviews menu associated with this application provides access to the views listed in Table 35.

Table 35: SSA_WANDevApp Icon Subviews Menu

Option	Opens the...
WAN Device Information	WAN Device Information Table View on Page 62.
WAN Telephone List	WAN Telephone List View on Page 64.
Model Information	Model Information view for the selected application. See Model Information Views on Page 70.

WAN Device Information Table View

Access: *From the **Icon Subviews** menu for the SSA_WANDevApp Application icon, select **WAN Device Information.***

This table provides a list of Demand Access remote WAN devices, which reflects the contents of the local system cache. The local cache maintains an account for each device. Each entry in the local cache is a conceptual row in the

SNMP table. The Device Information Table contains the following entries:

Index
A value that uniquely identifies the device.

IfIndex
The "ifIndex" value of the WAN connection group.

SessionIDs
The unique identifier of the last session when a WAN device was in the active state.

State
The state of the device. Possible values are: inactive, connecting, active, and disconnecting.

Description
A description of the device.

ConnectCtrl
The desired state of the WAN device. Possible values are: connect, disconnect, and unknown.

ConnectType
The type of WAN connection. Possible values are: digitalCircuit or analogCircuit.

L2Encapsulation
The type of Layer 2 encapsulation used when connecting to this device. Possible values are: ppp or unknown.

NumConnections
The current number of WAN connections to this device.

CurrBandwidth
The aggregate bandwidth of all current connections.

InitialBandwidth
The desired initial bandwidth (in bits per second) used when calling this device. The system will bring up enough connections to meet the bandwidth requirement. The value only represents dial type connections. It does not include leased circuits.

MaxBandwidth
The maximum amount of bandwidth (in bits per second) used when calling this WAN device.

HOSupport
Indicates whether an H0 connection can be used when calling this WAN device.

ChargedUnits
The total number of charging units applying to this device since this row was created.

SuccessCalls
Number of completed calls to this device.

FailCalls
Number of failed call attempts to this device since the row was created.

AcceptCalls
Number of calls from this device accepted since the row was created.

RefuseCalls
Number of calls from this device refused since the row was created.

ConnectTime
The value of "sysUpTime" when the device entered its current active state.

ConnectDirection
The direction from which the last connect occurred.

LastDisconnectTime
The value of "sysUpTime" when the last call to this device was disconnected.

LastDisconnectDirec
The direction from which the last disconnect occurred. Possible values are in or out.

LastDisconnectCause
The encoded network cause value associated with the last call (see **LastDisconnectText**).

LastDisconnectText
The reason for the last call termination. This entry exists because it would be impossible for a management station to store all possible cause values for all types of interfaces. It should be used only if a management station is unable to decode the value of **LastDisconnectCause**.

WAN Telephone List View

Access: *From the **Icon Subviews** menu for the SSA_WANDevApp Application icon, select **WAN Telephone List.***

This table contains a list of telephone numbers accessible to the device. This table's entries include an index identifying the phone number (**TNListIndex**), an index identifying the device (**TNDeviceIndex**), and the actual telephone number for the device (**TelNumber**).

Performance Views

This section provides a general description of the Performance views available for models of the CyberSWITCH and SmartSwitch Access devices.

Performance views provide statistical information about the operation of the device and packet information for the device and its ports. The following performance views are described in this section:

- *CSIIfPort Performance View*
- *Generic If Port Performance View* (Page 66)
- *CSI Bridge Interface Performance View* (Page 66)

For more information on Performance views, refer to ***SPECTRUM Views***.

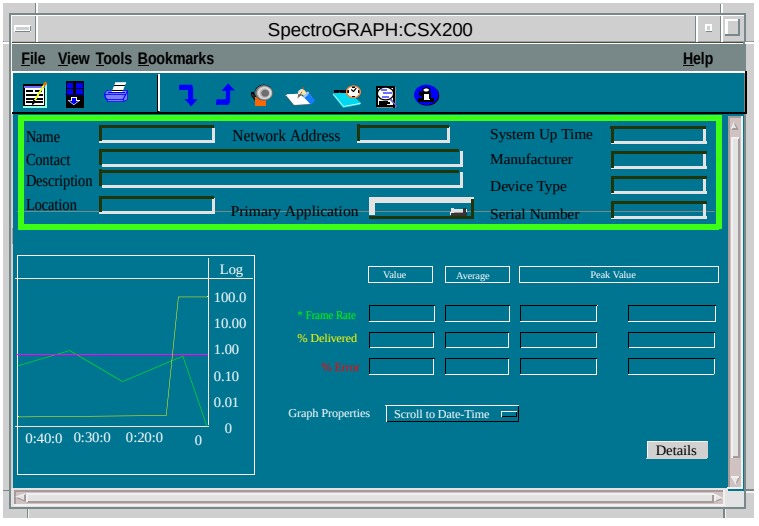
CSIIfPort Performance View

Access: *From the Interface Icon for the CyberSWITCH device, double-click the* ***Gauge Label****.*

This view (Figure 13) includes both a graph and a table that show current, average, and peak values for the following performance statistics:

- % Transmitted
- % Discarded
- % Error
- % Host Bound
- * In Packet Rate
- * Out Packet Rate
- * Total Packet Rate
- In Load
- Out Load
- Total Load

Figure 13: CsIIfPort Performance View



Generic If Port Performance View

Access: *From the Interface Icon for the SmartSwitch Access device, double-click the* ***Gauge Label****.*

This view provides the following statistical information about packet traffic through the selected port:

- Load
- * Packet Rate
- % Error
- % Discarded

CSI Bridge Interface Performance View

Access: *From the Module Icon for the CyberSWITCH device, double-click the* ***Bridging Application Label****.*

[1]This view provides the following statistical information about packet traffic through the selected Interface:

- * Received Rate
- % Filtered
- % Forwarded
- * Transmitted Rate

1. The Application displayed in this label can vary, dependent on the application selected. See *Application label* on page 14.

Configuration Views

This section describes the various Configuration views and subviews available for models of the CyberSWITCH and SmartSwitch Access devices.

Configuration views allow you to view and modify current settings for the modeled device and its interfaces, ports, and applications. The following Configuration views are available for models of CyberSWITCH and SmartSwitch Access devices:

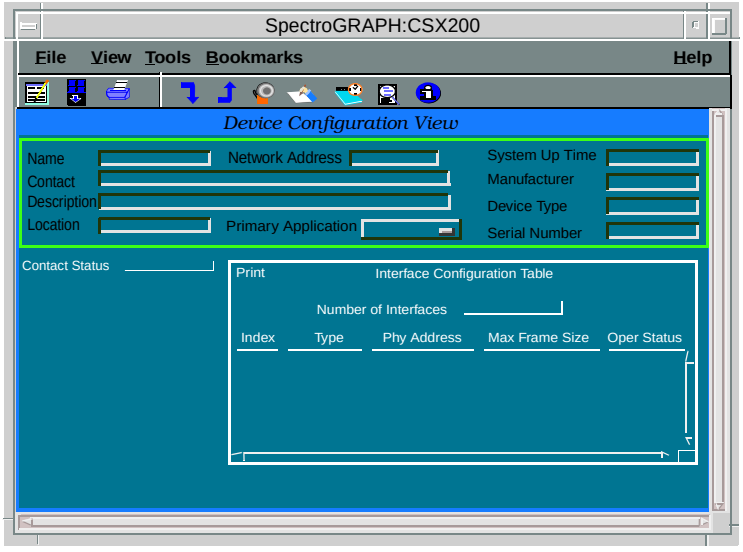
- *Device Configuration View*
- *Port Configuration - CSIIfPort View (Page 68)*
- *Port Configuration View (CSX200 only) (Page 69)*
- *Repeater Configuration View (CSX200 only)* (Page 69)

Device Configuration View

Access: *From the **Icon Subviews** menu for the Device icon, select **Configuration**.*

This view (Figure 14) provides status and configuration information about the device as a whole as well as on a port-by-port basis. Fields and column headings within the Device Configuration view and its subviews are explained in detail in ***SPECTRUM Views***.

Figure 14: Device Configuration View



Port Configuration - CSIIfPort View

Access: *From the **Icon Subviews** menu for the Interface icon, select **Configuration.***

This view provides the port configuration and operating status of the device and allows you to enable or disable the interface selected. This view displays the following information:

Index
The numerical value identifying the interface.

Interface Type
The type of interface.

Operation Status
The current operating condition of the interface. Possible values are: On, Off, and Test.

Admin Status
This menu button allows you to enable or disable the interface or place it in test mode. Possible selections are: On (Enable), Off (Disable), and Test (Testing mode).

IF Description
Provides a description of the interface.

Port Configuration View (CSX200 only)

Access: *From the **Icon Subviews** menu for the Port icon, select **Configuration.***

This view provides port management information on the device and allows you to enable or disable the selected port. This view displays the following information:

Port Id
The numerical value identifying the port.

Administrative Status
This menu button allows you to enable or disable the port or place it in test mode. Possible selections are: On (Enable), Off (Disable), Test (Testing mode).

Operational Status
The current operating condition of the port. Possible values are: Operational or Not-operational.

Segmentation Status
The segmentation status of the port. Possible values are: Segmented or Not-segmented.

Link Status
The current link status of the port. Possible values are: Linked or Not-linked.

Repeater Configuration View (CSX200 only)

Access: *From the **Icon Subviews** menu for the Ethernet1 Application icon, select **Configuration.***

This view provides repeater management information and displays the following information:

Port Count
The number of ports including the internal repeater port.

Ports On
The number of ports on or enabled.

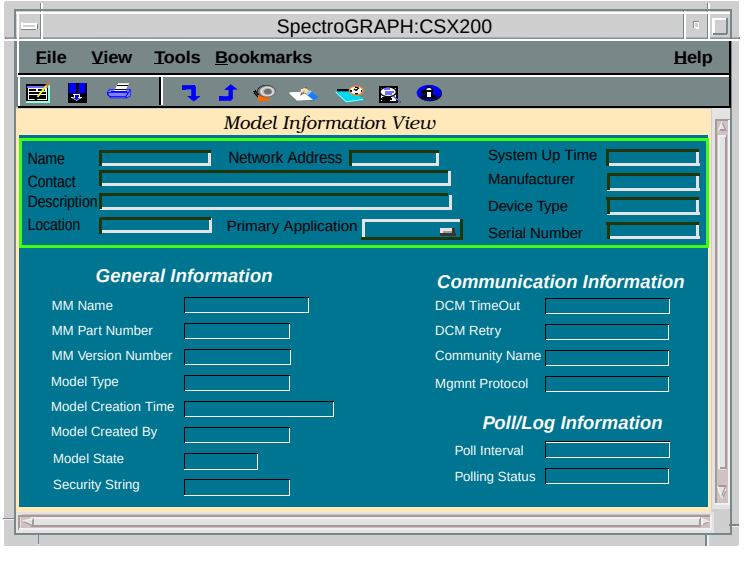
Ports Operational
The number of ports transferring packets.

Model Information Views

This section provides a brief description of the Model Information views available for models of the CyberSWITCH and SmartSwitch Access devices.

Model Information views provide descriptive and configuration information about models of devices, interfaces, and applications. Figure 15 shows an example of a Model Information view accessed from the **Icon Subviews** menu for the CSX200 model's Device icon. Model Information views are also available for each of the Interface icons in the Interface Device and Interface Device Topology views, and for each of the Application icons in the Application view. Although these views may vary slightly depending on the particular entity being modeled, their basic layout and content are similar for most SPECTRUM management modules. Therefore these views are described in more detail in ***SPECTRUM Views***.

Figure 15: Model Information View



Index

A

Admin Status 68
  disable 68, 69
  enable 68, 69
Administrative Status 22, 69
AdminStatus
  Container Logical Information 40
Application
  Bridging
    Enet SDB 28
    PPP_Bridge 28
    Spanning Tree 28
    Static 28
    Transparent 28
  Bridging - Enet SDB
    Ct_BdgEnet_App (application type name) 28
  Bridging - PPP_Bridge
    PPP_BdgApp1474 28
  Bridging - Spanning Tree
    Ct_Stp_App 28
  Bridging - Static
    Static_App 28
  Bridging - Transparent
    Transparnt_App 28
  Device-specific 27
  DS1 28
    CtWANAppDS1 28
  Frame Relay 28
    rfc1315App 28
  Icons 26
  MIB-II 28
    IP 28
    SNMP2_Agent (application type name) 28
    System 28
    UDP 28
  MIB-II - IP
    IP2_App 28
  MIB-II - System
    System2_App 28
  MIB-II - UDP
    UDP2_App 28
  RS-232 28
    CtWANAppRS232 28
Application Label 13
Application type name
  Ct_BdgEnet_App 28
  Ct_Stp_App 28
  CtWANAppDS1 28
  CtWANAppRS232 28
  IP2_App 28
  PPP_BdgApp1474 28
  rfc1315App 28
  SNMP2_Agent 28
  Static_App 28
  System2_App 28
  Transparnt_App 28
  UDP2_App 28
Application View 26
Applications Common to this Device 27

B

B-Channels Available
  ISDN B-Channel Usage Information 37
B-Channels Highwater
  ISDN B-Channel Usage Information 38
B-Channels InUse
  ISDN B-Channel Usage Information 38
BldOut
  IH Line View 32
Bridging
  Enet SDB 28
  PPP_Bridge 28
  Spanning Tree 28
  Static 28
  Transparent 28

Index

C

CallLineID
  User Information 35
CallLineIDTwo
  User Information 35
Chassis Device view
  Device Icon labels 13
CodingType
  IH Line View 32
Collisions 24
Colors
  Interface Status Label 19
Community Index
  Community Name View 34
Community Name
  Community Name View 34
Community Name View 34
Condition Status Label 27
Configuration view
  Port Configuration - CSIIfPort view 68
  Port Configuration view 69
  Repeater Configuration view 69
Configuration views 67
Container Application 38
Container Logical Information 40
Container Network Address Information 41
Container Physical Information 40
Container Resource Information 39
Container Type Report 39
Containing Physical Entries
  Container Type Report 39
Containing Physical Entry ID
  Container Type Report 39
CsEnetRptrMgt Icon 24
Ct_BdgEnet_App 28
Ct_Stp_App 28
CtWANAppDS1 28
CtWANAppRS232 28
CyberSWITCH Applications 29
CyberSWITCH Interface Icon Subviews Menu 21

D

Device Configuration view
  Port Configuration - CSIIFPort view
    Off (Disable) 68
  Port Configuration - CSIIfPort view
    On (Enable) 68
    Test (Testing Mode) 68
  Port Configuration view
    Off (Disable) 69
    On (Enable) 69
    Test (Testing Mode) 69
Device icon 8, 18, 26
Device Icon labels 13
  Application Label 13
  Device Identification Label 13
  Interface Label
    Interface Number Label 15
    Interface Status Label 15
  Port Label
    Port Number Label 16
    Port Status Label 17
Device Icon Subviews menu 13
Device Identification Label 13
Device Topology Views 23
Device view
  Interface 18
Directory
  IH Data View 33
Disable port 68, 69
DS1 28

E

Elapsed Time
  ISDN B-Channel Usage Information 38
Enable port 68, 69
Enable/Disable
  Port 25
Entries
  Container Physical Information 40
Entry Class
  Container Physical Information 40
Entry Status

Index

Container Physical Information 41
Entry Type
Container Physical Information 40
Ethernet repeater ports 16

F

Frame Relay 28
FramType
IH Line View 32

G

Gauge
Logical 19
GenericNo.
IH Resource View 31

I

I/oBase
IH Resource View 30
Icon Subviews menu
Device icon 13
Icons
Device 8, 26
Interface 19
ID
Container Logical Information 40
Container Physical Information 40
Container Resource Information 39
InterHub Interface View 37
IF Description 68
IH LAN View 33
IH Line View 31
IH Resource View 30
IH Trap Receiver View 34
Index
Container Network Address Information 41
IH Data View 33
IH Line View 31
IH Resource View 30
InptNo
IH Resource View 30
Interface
IH Line View 32
Number 19
Interface Device view 18
Interface icon 19
Interface icon 19
Interface Icons (CSX200 & 400 only) 15
Interface Index 68
Interface Label
Interface Number Label 15
Interface Status Label 15
Interface Number Label 15, 19
Interface Status Label 15
Interface Status View 22
Administrative Status 22
Operational Status 22
Interface Type 68
Interhub Application (ih000App) 42, 67
InterHub Interface View 37
IP2_App 28
ISDN B-Channel Usage Information 37

L

Labels
Application Icon
Condition Status 27
Model Name 27
Model Type 27
Interface
IF Status Label 19
Interface Type Label 20
Physical Address Label 20
Line Name
IH Data View 33
LineIDFour
User Information 35
LineIDThree
User Information 35
Link Status 69

Index

LinkCES
IH Data View 33
LinkSPID
IH Data View 33
LinkTEI
IH Data View 33
Logical Bridging Access Label 13

M

MAC
Address
Label 19
MemBase
IH Resource View 30
MIB Access Level
Community Name View 34
Mib Pointer
Container Resource
Information 39
MIB-II 28
IP 28
System 28
UDP 28
Mode (Icon or List) 26
Model type 8
Model Type Label 27
Module 11
Module Icon 11
Monitor Reset
ISDN B-Channel Usage
Information 37
MotMPRouter 8

N

Name
Container Logical Information 40
IH Line View 31
InterHub Interface View 37
User Information 35
Net Address
Container Network Address
Information 41
Network
Information 19
Network Type
Container Network Address
Information 41
No. of Links
IH Line View 32

O

Off (Disable) 68, 69
On (Enable) 68, 69
Operation Status 68
Operational Status 22, 69
OperStatus
Container Logical Information 40

P

Packets Forwarded 24
Performance views 65
Port
IH Line View 31
Notes 25
Port Configuration 25
Port Configuration - CSIIfPort View
Interface Index 68
Test (Testing Mode) 68
Port Configuration - CSIIfPort
view 68
Admin Status 68
disable 68
enable 68
off 68
on 68
test 68
IF Description 68
Off (Disable) 68
On (Enable) 68
Port Configuration /- CSIIfPort view
Interface Type 68
Operation Status 68
Port Configuration view 69
Admin Status
disable 69
enable 69
Administrative Status 69
Link Status 69
Off (Disable) 69

Index

On (Enable) 69
Operational Status 69
Port Id 69
Segmentation Status 69
Test (Testing Mode) 69
Port Count 69
Port Icon Subviews Menu 16
Port Icons (CSX200 Series Only) 16
Port Id 69
Port Label
Port Number Label 16
Port Status Label 17
Port Management
Administrative Status 69
Link Status 69
Operational Status 69
Port Id 69
Segmentation Status 69
Port Number 24
IH LAN View 33
Port Number Label 16
Port Path Cost
IH LAN View 34
Port Priority
IH LAN View 33
Port Status Label 17
Port Type Label 19
Ports On 69
Ports Operational 69
PPP_BdgApp1474 28

R

Repeater Application (CsEntetRptrMgt) 41
Repeater Configuration view 69
Port Count 69
Ports On 69
Ports Operational 69
Repeater Interface Icon 24
Report Index
Statistic Report 36
Report Message
Statistic Report 36
rfc1315App 28
ROC Com
Container Logical Information 40
Router Applications Icon Subviews menu
menu selections
Configuration 14
Model Information 14
RS/232 28
RWCommStr
Container Logical Information 40

S

Segmentation Status 69
Serial Number
Container Type Report 39
SglMethod
IH Line View 32
Slot
IH Resource View 30
SmartSwitch Interface Icon Subviews Menu 21
SNMP2_Agent 28
SSA_AapslogApp 49
Client/Server Log Configuration View 49
Log Information View 50
SSA_BufferApp 50
Buffer Leak Information Table View 51
Buffer Pool Information Table View 51
SSA_CMMContApp 42
Board Information Table View 42
Module Information Table View 45
SSA_DAApp 46
Demand Access (DA) Registry Table View 46
SSA_DS0App 52
Configuration View 52
IF Information View 53
SSA_ISDNApp
ISDN Call Information View 55
ISDN Common Configuration Table View 55
ISDN Line Configuration Table View 55
SSA_IsdnApp 54

Index

SSA_LineStsApp 56
Line Statistics Table View 57
SSA_MemoryApp 58
Memory Analysis View 58
SSA_MsgXferApp 47
Message Transfer Service Table View 47
SSA_ShRAMApp 60
Shared RAM Information View 60
SSA_WanConnApp 60
Wan Connection Info Table View 60
SSA_WANDevApp 62
WAN Telephone List View 64
SSA_WanDevApp
WAN Device Information Table View 62
Static_App 28
Statistic Report 36
Status
Administrative 19
Port 24
Status Information 36
Status Report Index
Status Information 36
Status Report Message
Status Information 36
SUCommStr
Container Logical Information 40
Supported devices 7
SwitchType
IH Resource View 31
SyncType
IH Resource View 30
System2_App 28

T

TableIndex
User Information 35
Tasks 9
Test (Testing Mode) 68, 69
Time Stamp
Container Physical Information 41
Transparnt_App 28
Trap Enabled
ISDN B-Channel Usage Information 38
Trap Receiver In
IH Trap Receiver View 34
Trap Receiver IP
IH Trap Receiver View 34
Trap Rvr Community Name
IH Trap Receiver View 34
Trap Trigger
ISDN B-Channel Usage Information 38
Type
Container Logical Information 40
Container Resource Information 39
IH Line View 31
IH Resource View 30
InterHub Interface View 37
Type of Device
Container Type Report 39
Type of Logical Changes
Container Type Report 39
Type of Physical Changes
Container Type Report 39
Type of Physical Entries
Container Type Report 39

U

UDP2_App 28
User Information 35
UserIPAddr
User Information 35
UserIPHostID
User Information 35

V

Variant
IH Resource View 31
VerifyDigits
IH Data View 33
Version
Container Logical Information 40
View
Port Configuration 69

Index

Port Configuration - CSIIfPort 68
Repeater Configuration 69
Views
Configuration 67
Device Configuration 67
Interface Status 22
Performance 65